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Mountain Biking UK®

OCT 2015
ISSUE 321



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15 lights on test

Top tips for best ever night rides

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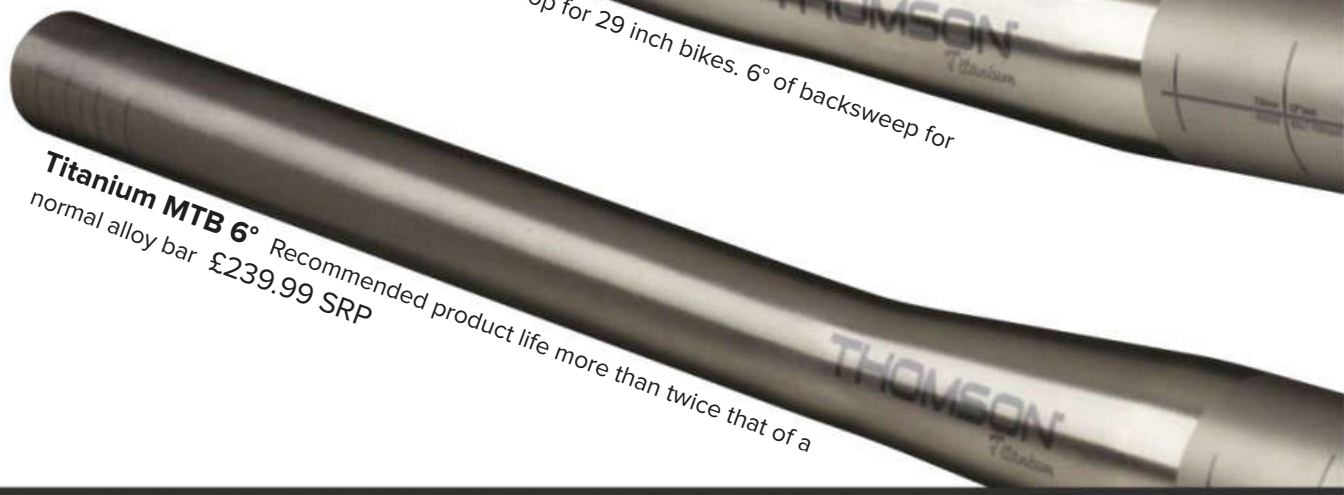
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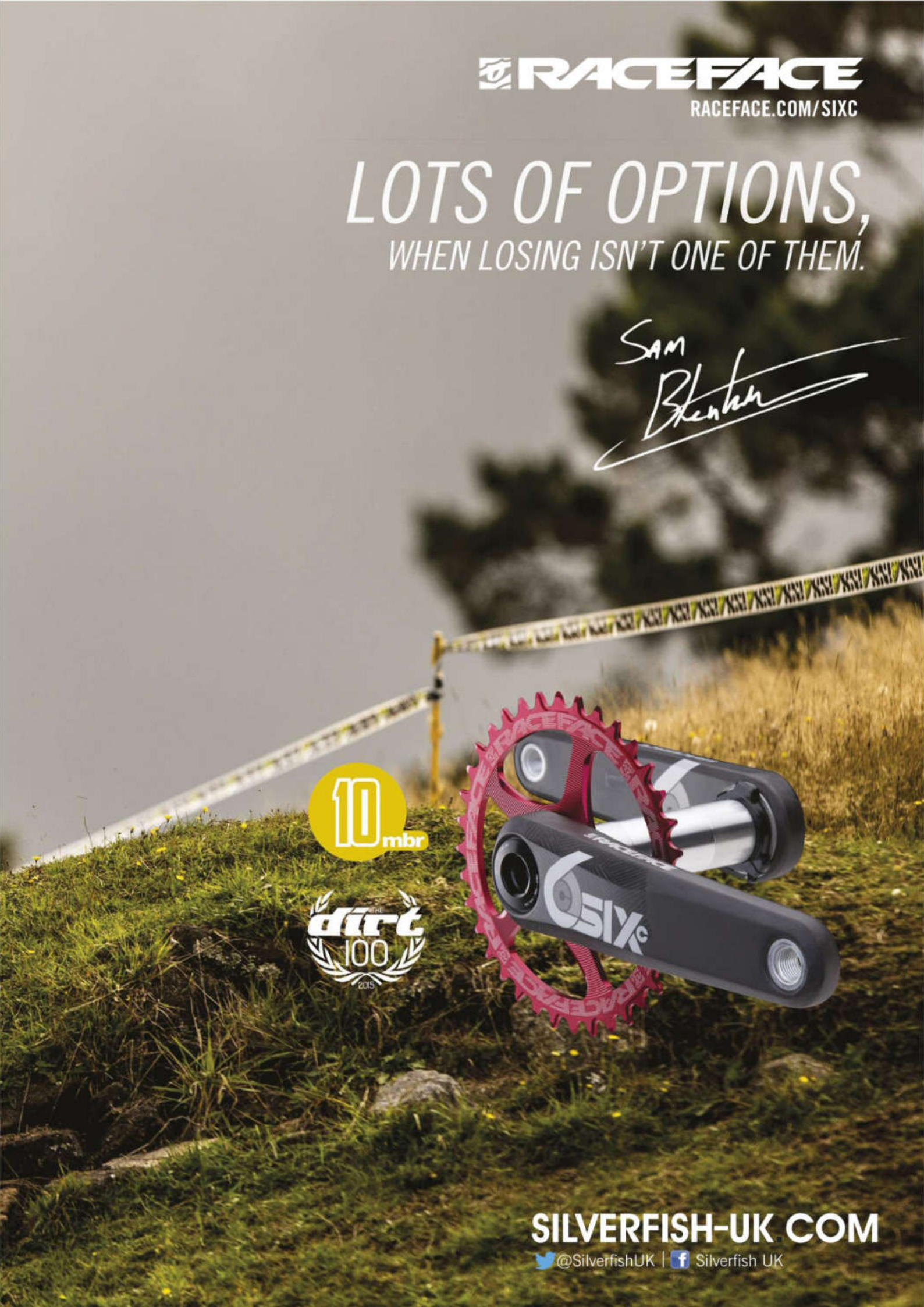
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* Pull-out maps not available to overseas readers

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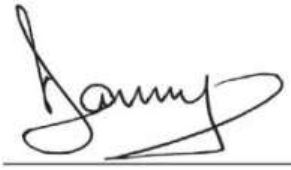
EDITOR'S LETTER

Fixing your bike doesn't have to be a nightmare



One of the most daunting elements of being a mountain biker can be what to do when something goes wrong with your bike. Do you, like us, always have that internal battle of whether to go ahead and try to bodge it yourself rather than admit defeat and hand it over to your local bike shop or friendly mechanic to sort out?

Most of us would like to be a little more accomplished when it comes to spannering, which is why we've put together our *Home Mechanic's Essential Workshop Guide*, free with this issue. We've broken down many of the common problems mountain bikers are likely to experience and worked through the fixes in an easy to follow format. Don't worry if you're a complete novice – there are plenty of walkthroughs to get you started and help build up your confidence with every fix you do. Happy spannering!



Contact us

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Danny Walter *MBUK* Editor in Chief



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Immediate Media Company
Tower House, Fairfax Street,
Bristol, BS1 3BN Tel: 0117 927 9009
Email: mbuk@immediate.co.uk Web: www.bikeradar.com
Blog: www.bikeradar.com/blog/mountain-biking-uk
Facebook: www.facebook.com/mbukmag
Twitter: http://twitter.com/mbukmagazine

EDITORIAL
Editor in Chief **Danny Walter**
danny.walter@immediate.co.uk
Art Editor **James Blackwell**
james.blackwell@immediate.co.uk
Deputy Art Editor **Matt Orton**
matt.orton@immediate.co.uk
Operations Editor **James Costley-White**
james.costley-white@immediate.co.uk
Technical Editor in Chief **Robin Weaver**
robin.weaver@immediate.co.uk
Features Editor **Alex Evans**
alex.evans@immediate.co.uk
Cartoonist **Jo Burt**
Workshop Manager **Jonny Ashelford**

CONTRIBUTORS
Hannah Barnes, Steve Behr, Russell Burton, Ian Collins, Max Darkins, Chris Davison, Tom Dowie, Olly Forster, Roo Fowler, Paris Gore, Jake Ireland, Siobhan Kelly, Guy Kesteven, Mick Kirkman, Andy Lloyd, Sven Martin, Tom Marvin, Ric McLaughlin, Dan Milner, Joe Rafferty, Seb Stott, Keith Valentine, Olly Wilkins

ADVERTISING
Advertising Director **Sean Woods** 01173 008159
sean.woods@immediate.co.uk
Advertising Manager **Claire Hawkins** 01173 008128
claire.hawkins@immediate.co.uk
Advertising Sales Manager **Adrian Miles** 01173 008138
adrian.miles@immediate.co.uk
Key Account Manager **Andy Nelson** 01179 3008137
andy.nelson@immediate.co.uk
Key Account Manager **Jo Penny** 01173 008144
joanna.penny@immediate.co.uk

MARKETING
Marketing Manager **David Leach** david.leach@immediate.co.uk
Marketing Executive **Megane Heurtin** megane.heurtin@immediate.co.uk

CIRCULATION
Subscriptions Marketing **Owain Jevons**
Trade Marketing Manager **John Lawton**

PRINT & PRODUCTION
Production Coordinator **Ian Wardle**
Production Director **Sarah Powell**
Production Manager **Louisa Molter/Rose Griffiths**

LICENSING
International Director **Tim Hudson**

IMMEDIATE MEDIA COMPANY
Publishing Director **Alison Worthington**
Group Art Director **Matthew Hunkin**

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Chairman Stephen Alexander
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Tel: 020 7150 5211 (London)
Tel: 0117 927 9009 (Bristol)
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Out Front

THE **FIVE STORIES** LEADING THE WAY THIS MONTH

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DH WORLD CUP

Girls on fire

The 2015 Downhill World Cup series is all wrapped up, and what a season it was! Our British women had an incredible year, with Rachel Atherton winning six rounds and only being beaten once, by France's Emmeline Ragot (who went on to announce her retirement from DH racing after suffering a horrific injury at Mont-Sainte-Anne). Manon Carpenter and Tahnée Seagrave completed the British whitewash, backing Rachel up in second and third place in the overall rankings.

The men's series was a more multinational affair, with a resurgent Aaron Gwin taking the overall title home to America after a fierce battle with France's Loic Bruni, in second, and South Africa's Greg Minnaar, who finished fourth. Troy Brosnan had been on form all season and the Aussie was rewarded with third place overall. Josh Bryceland rounded out the top five after recovering from last year's World Champs injury, with fellow Brits Gee Atherton and Danny Hart also finishing in the top 10.

There was British success in the Junior World Cup too, where series winner Laurie Greenland proved he's going to be the one to watch when he makes the move up to the senior ranks. The 2015 World Cup may have only just finished, but we can't wait for the 2016 season to kick off if it's half as exciting as this one!

Photo: Sven martin


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FLYUP 417 PROJECT

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A day at the races

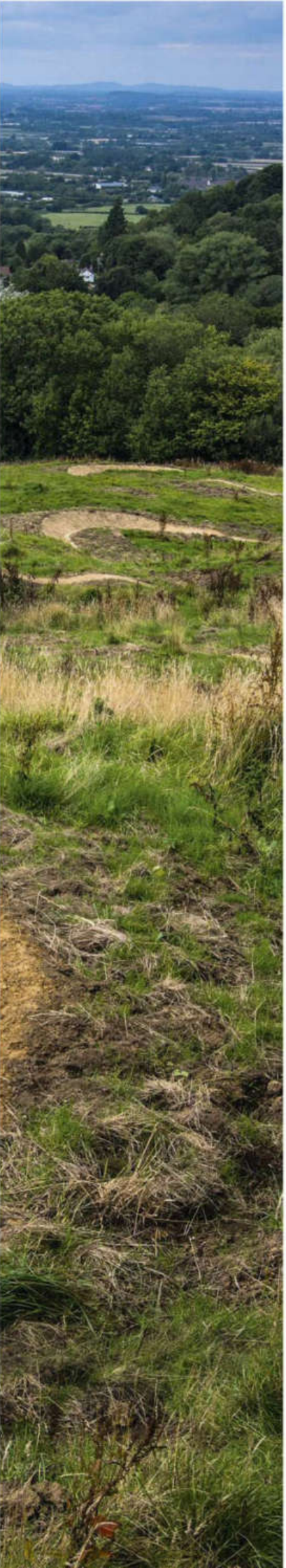
Cheltenham may be synonymous with toffs and horses but there'll be a whole different kind of racing going on nearby soon, when the 417 Project opens its doors to hordes of mountain bikers wanting to beat their mates down the downhill runs and claim bragging rights on the 4X track.

When we first checked out the project last summer it was just an empty Gloucestershire hillside, but FlyUp Downhill – the guys behind the uplift services at the Forest of Dean and Gawton – had big plans. With the red tape successfully navigated, Architrail are hard at work creating the tracks, which will include blue, red and black DH runs, a 4X track and a dual slalom course. And don't worry about pushing to the top – the site is set to boast the UK's first drag lift uplift service! Two big barns will house a cafe, workshop and bike shop.

Our snapper Andy Lloyd sampled some of the tracks, and says the blue is super-flowy with optional jumps. He also teased us with talk of a gnarly black run down a gully in the trees. Andy managed three runs down the blue in 45 minutes, pedalling to the top. This is a man who eats chocolate for breakfast so if you're a keeno we reckon you can do four laps an hour!

With easy access from the M5, the 417 Project looks set to be a hit when it opens in the autumn. Until then, keep up with developments at **www.facebook.com/FlyupDH** and get fantasising about how many drifts you'll be able to do and cakes you'll be able to eat!

Photo: Andy Lloyd





DANGER, HIGH VOLTAGE!

A world without wires

We've already got powered shifting and electronically controlled suspension (or at least, those of us with extra-deep pockets and a love of gadget geekery do), so what's next? Wireless technology, if the huge halls of this year's Eurobike trade show are anything to go by. The day when we're going to have to turn our bikes on before going for a ride is coming closer and closer...

Magura are leading the way with their new wireless dropper seatpost. Named the Vyron, it boasts 150mm of adjustment, hydraulic internals, no more cables and a respectable price tag of €400 (approx £294). The German company have used ANT+ technology – as used to link speed and cadence sensors, heart rate monitors and power meters to wireless bike computers – to connect the post to its handlebar remote. It's charged via a built-in USB port and Magura claim 40 hours of battery life.

No more internal routing nightmares or cable rub, and nothing to snag – sounds good to us. But will rivals – or prank-pulling mates – be able to hack your seatpost? What happens if it gets really wet in a race run or the remote becomes unsynchronised with the post? Are these even possibilities? We can't wait to get our hands on one and go for a ride!

SRAM are also in the game – they've announced wireless shifting for our roadie cousins' bikes and it's likely this will trickle down to our mucky mountain bikes in the near future. Shimano were the first to market with an electronic MTB groupset – XTR Di2 – and we can't see them letting their main rival steal their thunder, so there's a fair chance they'll be going wireless too.

And it doesn't end there. Magura's wireless dropper can already be integrated with the eLECT electronic lockout system found on their forks. We can foresee a day when all the electronic components on your bike can be integrated – so raising your dropper post could cause your suspension to lock out and a lower gear to be selected. Let's just hope a selfie button won't be included any time soon!



THAT'S KENTATAINMENT!

XC racer shows up the DH boys

Kenta Gallagher is the rarest of commodities in the talent-rich sphere of world-class downhill racing – a privateer capable of mixing it with the factory riders. What makes him more unusual again is that he's already won a World Cup, only in XC Eliminator.

This former pro cross-country racer shocked the DH world when he qualified within the top 20 at this year's fourth World Cup round in Switzerland. But is there even more to come? "I was a bit shocked by my quali run in Lenzerheide," says Kenta, shrugging off his incredible 17th place. "I'd like to do it again so I can prove to myself that it wasn't a fluke!" His 41st place finish on finals day suggests it was no fluke, and something tells us we'll soon be seeing a lot more of the young Invernessian.

Before his move to DH racing, Kenta spent seven years in various British Cycling backed development programmes and was among the XC riders caught up in the drive for Olympic glory. "British Cycling was pretty intense," he says. "I never thought they got the concept of mountain biking, and started to get a bit fed up with it after a while" It's all change now though. Gone are the early morning gym sessions and performance tracking graphs, and Kenta is predominantly based out of the back of his van. "It's hard being a privateer, but it's mechanics I miss the most!" he laughs. "I used to have my bikes fixed for me. If I break my wheel now I just have to bodge it!"

Kenta's goals for the rest of the year are simple – to keep qualifying and to keep having fun. We're pretty sure he's capable of doing both.

Photo: Keith Valentine

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A new breed of full-face?

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04
05

Want the protection of a full-face helmet when blasting down a trail or enduro stage but don't want to overheat when it's time to hammer at the pedals? Swiss clothing and protection specialists iXS set out to solve this problem, and the result is a distinctive-looking lid that promises to keep your bonce cool (well, coolish) during longer stage races but still offer all the protection needed to take on wilder downhill runs should you wish to jump on the uplift instead.

Underneath the new Xult's fibre-reinforced polymer shell lies the key to preventing too much heat build-up – iXS's 'Vortex in-moulded aeration system'. This draws cool air in through multiple mesh-covered vents dotted all over the front of the lid and then expels it through 11 rear exhaust vents. IXS say the Xult is a true crossover helmet and can be worn for enduro or downhill.

Other features include an Emergency Padding Release system, an adjustable peak and our preferred double D-ring closure. There are three sizes to choose from and six colours too. Weight is a claimed 1,100g, which isn't too shabby.

£249.99 **Hotlines**
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27.5 IS MORE THAN A WHEEL SIZE.

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GIANT

ALTURA

ALWAYS ATTACK



THE START OF WINTER DOESN'T MEAN THE END...

The Altura Attack 360 Jacket offers engineered performance, perfect for Winter Rides. ErgoFit 3D patterning with breathable, waterproof hardshell fabric body, waterproof softshell elbow joints and pit vents deliver ride comfort in challenging conditions.

Enhanced protection from the elements comes from a bungy cord hem with slight drop tail, waterproof zippers, a detachable hood and adjustable Winter Cuffs.

Don't let winter conditions beat you down, fight back with the Attack 360 Waterproof Jacket.

IT'S WINTER, LET'S RIDE

WATERPROOF
Taped seam waterproof fabrics with breathable properties.

WINDPROOF
Breathable windproof fabric engineered to block wind.

BREATHABLE
Allows excess body heat to escape from inside the garment.

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The MBUK Pulse

MOUNTAIN BIKING THAT MAKES YOU FEEL ALIVE

FEATURING



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Could trail hub shut?



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The return of Missy Giove



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Hot trends at Eurobike '15

Titans of dirt

Big moves and big bails at the Red Bull Joyride

The Red Bull Joyride at Crankworx Whistler is the biggest slopestyle event of the year and it never fails to deliver huge thrills – and equally big spills. Brandon Semenuk won this year's event in front of a home crowd with a massive score of 93.8 – you can check out his amazing super-technical run at **www.redbull.com/bike**. Fellow Canadian Brett Rheeder finished 16th but it was still enough to make him the King of Slopestyle, following his wins at Crankworx Rotorua and Crankworx Les Deux Alpes. Here are our three highlights from another classic event...

1 **Cam Zink** eating it hard – he didn't have quite enough speed for a flip trick but sent it anyway!

2 **Brett Rheeder** taking the Crankworx King of Slopestyle title despite not having the best of luck in Whistler – he had a massive bail after losing too much speed on a transition

Brit **Sam Reynolds** taking sixth place with an awesome run – style for miles and epic tricks!

MBUK PRO'S EYE VIEW



HANNAH BARNES

RACER AND ADVENTURER

"The past two months on the road in Europe, Colorado and now Whistler have been a blur of long drives, airports, good friends, racing, different cultures, van life, and of course riding! Combloux in the French Alps was my first stop. The first task was to get there – my van has been smoking intermittently and no one has any idea why. Following the advice of my local garage to "get some good breakdown cover and enjoy your holiday", I set off on my month-long European trip hoping for the best!

My first adventure was the MB Ultra Marathon, one of the hardest single-day races in the world. This type of race is as much about survival as racing. Everyone shares something from being part of such a tough experience, so the camaraderie and banter between the riders is as memorable as the views and singletrack. I love racing enduro, but I also love taking on these bigger marathon/adventure type races – it's all about riding bikes.

The past three Enduro World Series rounds have gone by in a blur. The tragic death of Will Olson in Crested Butte after a simple crash during the race really hit home. It shook up everyone racing and the greater MTB community too. The one thing I think we all learned is that life is precious and relatively fragile, so we need to slow down and appreciate what we have, enjoy the simple things in life and treasure all the people we love."



Afan under threat?

Council won't carry on running original centre at a loss

The Afan Valley in South Wales has been at the forefront of the trail centre movement since the earliest days of waymarked mountain bike routes, so we were surprised to hear that one of its two visitor centres is threatened with closure.

Neath Port Talbot County Borough Council say that in the "current financial climate" they're no longer prepared to subsidise the Afan Forest Park visitor centre and cafe located at the original trailhead, which have run at a loss for several years (the newer trail hub further up the valley in Glyncorrwg is unaffected).

The council are looking for someone to run the centre for them. If no suitable partner is found by 30 September, the cafe and visitor centre could close. In a statement, the council said that the trails, which are owned and operated by Natural Resources Wales, wouldn't be affected, and neither would the privately-run Afan Valley Bike Shed. But shop owner Ben Threfall says his contract to operate out of the visitor centre expires at the end of the year and after that its future is uncertain.

Local businesses and riders are worried that any closure will affect Afan's popularity, potentially driving riders away to other trail centres nearby. It's not a foregone conclusion though. If we want the trail centre to survive, the best way to show our support is to go and ride the trails, making sure to pay for parking and buy lots of tea and cake from the visitor's centre. Let's see what we can do!

A TO Z OF MOUNTAIN BIKING

K Kamikaze

With crazy speeds and massive wipe-outs, the annual Kamikaze race at Mammoth Mountain in California was arguably the event that put downhill mountain biking on the map.

The Kamikaze DH races began in 1985, when mountain bikes were simply fat tyred road bikes or modified cruisers. After bolting on a chainring with more than 50 teeth it was normal to spend most of the race in an aero tuck, except when speedway drifting round loose turns!

The course was simply the access road up the mountain, so there was gravel galore! Dropping 655m over 4.8km it wasn't hugely steep, but riders regularly clocked up over 65mph. Not gnarly enough for you? Mammoth also hosted the Reebok Eliminator, which sent two riders at a time head to head down the same track.

The smallest mistake could end up being pretty painful at those speeds. Early full-face helmets with bolt-on chinguards were conceived specially for these maniacs, who wore padding developed for other sports.

The Kamikaze still goes on today, as a much smaller event and part of the Mammoth Mountain Kamikaze Bike Games. As well as the Kamikaze, there's a dual race, a ProGRT (think American BDS) round and even a cross country race.

The track can still be ridden, as one of the Mammoth Mountain Bike Park's many lift-accessed trails. There's over 90 miles of singletrack, but many still head there on a pilgrimage to ride the legendary Kamikaze.





60 SECOND COACH

STAY FLEXIBLE AND RIDE BETTER

Fast and stylish riders are very flexible – just look at the shapes they pull when whipping the back end out or cornering hard. They certainly don't look as stiff as a board. Stretching can reduce your chances of injury and potentially help you ride faster too, by increasing your range of movement and reducing muscle tension.

Static stretching After riding stretch key areas, holding the stretch for 30 seconds and repeating three times. Always use good form.

Key areas Focus on the quadricep muscles at the front of your thighs, hamstrings at the back of your thighs, calf muscles and lower back.

Yoga Many of the best 'older' sportspeople say it's yoga that's kept them performing at the highest level for decades.

Dynamic stretching Before riding, gently take your arms, legs, head and hips through a full range of motion to warm your joints and muscles up.

THE BEST OF...

CHICKSANDS

The South East may not be known for its gnarly terrain but Chicksands Bike Park in Bedfordshire is a hidden gem that's well worth checking out. Easily accessed from the M1, A1 and M25, this tightly packed play park has every type of riding you could want, from mellow trails for beginners to big jumps and drops, and the fast draining sandy soil keeps the fun going all year round.





THE LOCAL

Tom Dowie

Tom runs Chicksands with his dad Steve and a few other guys. He also operates his MTB coaching business from there when he isn't off racing or running his other businesses. Tom has grown up here and helped the park develop, with plenty more in the pipeline. "I'm lucky to live only 10 minutes from the bike park, making it the perfect place for a quick session or a whole day of fun," he says.

ACCOMMODATION

Beadlow Manor Hotel (www.beadlowmanor.co.uk) offers comfy rooms and good food within a five-minute drive of the bike park. Camping is available at Henlow Bridge Lakes (www.henlowbridgelakes.co.uk), on the edge of Arlesey and set among some stunning lakes. The Crown (www.crownpub.co.uk) in Henlow has great food and cabins on site, so you can roll straight into bed after your evening at the bar.

TRAILS

Most of the trails in the bike park are rollable, bar a couple of gnarlier sections which you can get around in order to rejoin the main trail. There's a vast range of pump tracks, mini BMX tracks and dirt jumps, accompanied by some mini DH lines, 4X and dual slalom tracks, and singletrack. There are trails for every level of rider, which makes for a great day out, whether you want to chill or push your limits. Being sand based, it's ridable when all the other venues are too wet.

ENTERTAINMENT

Chicksands is a 15-minute drive from Hitchin, a historic market town with quality restaurants and cosy pubs. There are also some livelier bars if you fancy a drink. Alternatively, down the road in Henlow is a lovely gastro pub, The Crown, that comes highly recommended. Serving super-tasty pub/restaurant food, it's a great place for a posh burger and a beer. They also have overnight cabins if you want to stay there.

FOOD

On-site there's the famous Thai food van, which serves authentic Thai dishes – better than you can get in restaurants – along with traditional English food. There's your normal pad thai, plus different noodle, curry and rice dishes. Don't worry, you can still grab a bacon sandwich too! There's an Italian restaurant in the village next to the bike park and several local pubs, along with a Tesco where you can stock up on sandwiches.

"A LIGHTWEIGHT, GO-FASTER, TROUBLE-MAKER FOR THE DH RIDER WANTING TO CLIMB, XC RIDER WANTING TO DESCEND AND ENDURO RIDER WANTING SOMETHING LIGHTER TO PLAY ON"

- BIKE RADAR ★★★★½

THE ALL-NEW HABIT

GET INTO THE HABIT

The Habit delivers the best kind of MTB performance - pure, simple, idiot-grin fun! Composed and capable enough to run with bigger-travel bikes, yet light and lively enough to put the hurt on the leg shavers, we could have called it the "Sweet Spot." If you're looking for one bike to do it all, pick up a Habit.



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MODEL SHOWN HABIT CARBON 1 - £4,499.99 SRP
RANGE FROM £1,299.99 - £6,999.99 SRP

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T-130 TRAIL SUSPENSION

Whyte's evolved 2016 geometry, coupled with 130mm of QUAD-4 suspension, means the T-130 is fast and fun wherever you ride - from your local or purpose built trails all the way to the Alps.
The 2016 line features extra sizes and even more models with our innovative, super-stiff, symmetrical Single Chainring Specific design, promising greater control, better suspension performance and less maintenance.



T-130 SX £1,899



T-130 S £2,299



T-130 RS £2,759

For more information – or to try one for yourself, contact your local Whyte retailer.

whyte.bike

WHYTE
PERFORMANCE BY DESIGN

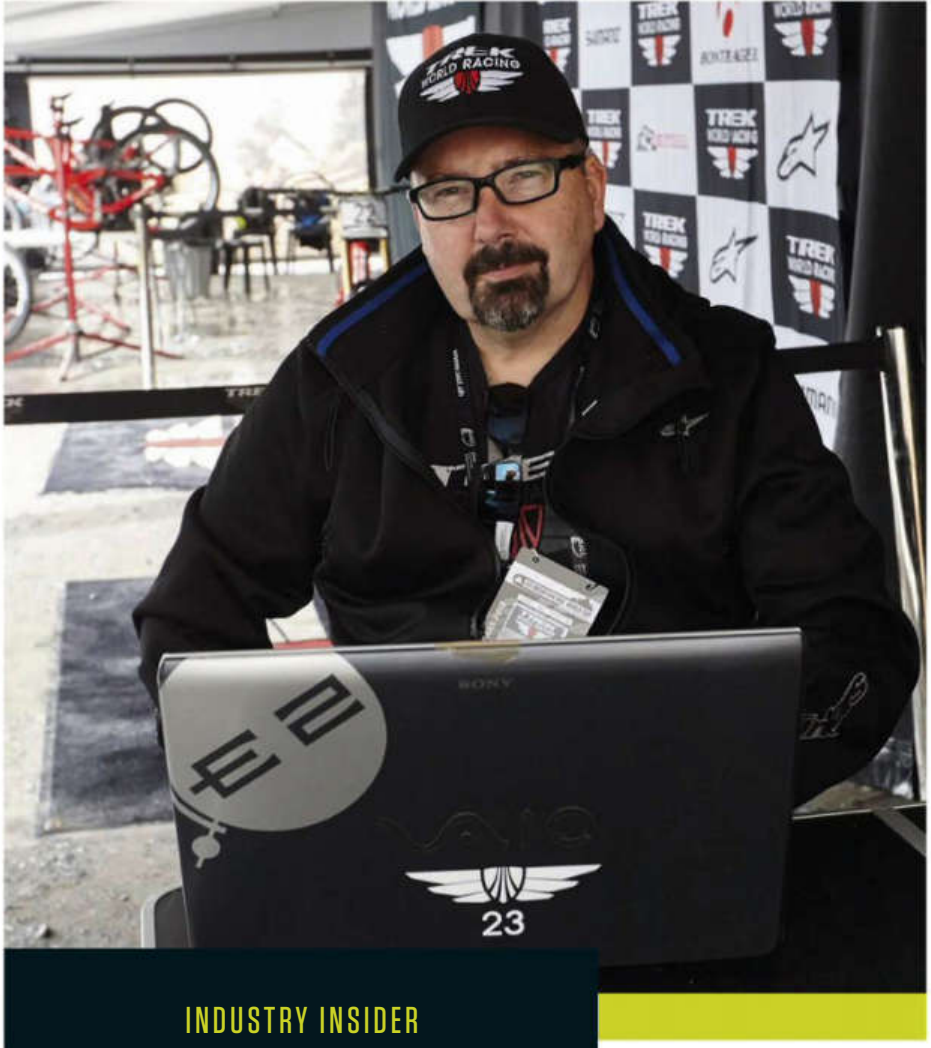


Photo: Steve Behr

INDUSTRY INSIDER

MARTIN WHITELEY

23 DEGREES SPORTS MANAGEMENT

One of the most successful managers in the business, Martin Whiteley looks after the hugely successful Trek World Racing squad. His CV also includes running the Global Racing and G Cross Honda teams, as well as managing racers of the calibre of Greg Minnaar, Brendan Fairclough and Sam Blenkinsop.

Blazer squad
I started running MTB races in the early 80s, organising the Australian National Championships from 1984 to 86. I was hired as the CEO of Cycling Australia in 1985 and brought MTB in under the Cycling Australia umbrella. In 1995 I was hired by the UCI to run MTB and the World Cup. I did that until the Sydney Olympics in 2000 and then started 23 Degrees Sports Management.

La buena vida
The 23 Degrees HQ is located in the Sierra Nevada National Park, in a small village called Cumbres Verdes, about 10km outside of Granada, Spain. It's the top floor of my residence, so I have a small commute and can also shut the office door and not have work interrupt life at home downstairs.

Talent spotting
What I look for in new riders isn't something I go into detail about since it's a cornerstone of the business, but it's a combination of factors. I get many emails from riders, and parents, wanting to know how to get onto a pro team. The simplest answer is that talented riders get results, no matter what level of support they get, and they will get noticed.

Personal favourites
It's no secret that I've always been a fan of Greg Minnaar's, from the very first time I saw him in South Africa. Not only is he extremely consistent – his record speaks to that – but he's the most gracious and humble victor, and the epitome of professionalism. I'm working with great riders on TWR too. Laurie Greenland is pretty damn special.

Winning formula
What's the formula for success? Hard work, commitment, mental strength, realistic goal setting and managing expectations. These are common across the board. After that you need to know a rider and their idiosyncrasies in order to fine tune what'll work for them personally.

Hitting the decks
Aside from bikes and mountain walks with the dogs, I enjoy cooking for large groups that come to the house, and not many people know that I used to be a professional DJ, with that stuff called vinyl before laptops and beatmatching software, so I still DJ private parties and events in Spain.

KNOW YOUR BIKE

UNLOCKING THE TECHNICAL JARGON TO EXPLAIN HOW OUR BIKES WORK

SEATPOSTS

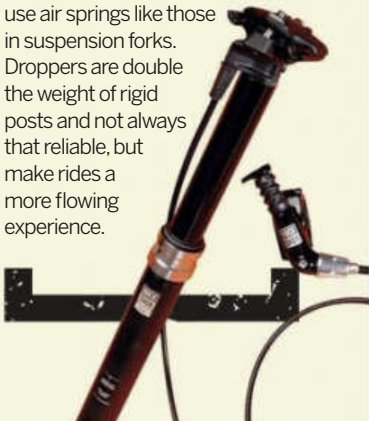
Sizes
Posts come in a range of lengths and sizes. The most common diameters are 27.2mm – often found on XC hardtails, where the flexier shaft adds comfort – 30.9mm and 31.6mm. Some posts have an offset 'layback' (as opposed to 'inline') saddle clamp. This moves the rider's weight further back on the bike – not always a good thing, though it does increase the effective reach.



Adjustment
The clamp at the top of the post lets you adjust the saddle angle and the reach to the handlebar (by sliding the saddle back and forth on its rails). They vary from single-bolt cradles to dual-bolt 'micro adjust' designs that allow more precise adjustment. You can alter the height of the saddle by sliding the post up or down in the bolted or QR seat clamp.



Droppers
Dropper posts let you lower your saddle for descending and raise it for climbing at the push of a button. Modern designs are either cable or hydraulically actuated, via a lever on the bar or under the saddle. Top-end models use air springs like those in suspension forks. Droppers are double the weight of rigid posts and not always that reliable, but make rides a more flowing experience.





THANK GOD FOR...

WIDE-RATIO CASSETTES

The huge 10-42t cassette introduced with SRAM's XX1 transmission in 2013 sent ripples through the sport and heralded the beginning of the end of the front mech. At one extreme, the massive 42t big sprocket rendered the granny ring obsolete for many riders. At the other, the 10g smallest cog made the big chainring redundant too, removing the need for a front mech or shifter. Brands such as Wolf Tooth, OneUp and absoluteBLACK were quick to see the way the wind was blowing and brought out 'expander sprockets' so riders could extend the range of their 11-36t cassettes. Now Shimano have joined the party too with their own take on the wide-ratio block. While their 11-40t XTR and 11-42t XT cassettes can't quite match SRAM's range, they're compatible with standard freehub bodies so they'll fit on any wheel. The only remaining obstacle is price, but we're sure to see this technology trickle down to lower price points over the next couple of years.

FLASHBACK

1990s
THE MISSILE STRIKES



MISSY THE MISSILE'S wild racing style and outrageous character were a big part of the World Cup downhill scene from the 90s all the way through to the early Noughties. When she retired in 2003 she'd won the World Champ's rainbow stripes and topped the podium at 11 World Cups. Things went uncharacteristically quiet until 2009, when it emerged that she'd been charged with possession and distribution of cannabis.

THAT WAS THEN

THIS IS NOW!

#59 Missy Giove

2015
BACK IN BLACK (JEANS)



OUT OF THE blue, Missy turned up at this year's Windham World Cup and announced her intention to race. It turned out that after six months in home detention and five years under supervised release she was finally able to leave her home state to compete. Riding a borrowed bike in jeans and a hoody, it was an exciting comeback – she nearly had a massive spill over the road jump. Seems the Missile may be back...

TRAIL TUCKER

Our favourite post-ride treats from the UK's top riding spots



#4 BPW Burger
BikePark Wales

As well as the excellent breakfasts, coffees and cakes, the flagship BPW Burger flies the flag for great nosh at BikePark Wales. A prime Celtic Pride 6oz burger with or without cheese in a brioche bun is the perfect hunger quencher for the end of the ride, along with one of their special BikePark Ales.


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A VERSATILE STRIP OF SAFETY.



THE STRIP DRIVE PRO REAR

The new Strip Drive Rear and Strip Drive Pro Rear are highly versatile, boasting five premium LED's with multiple, extremely visible, flash and output modes up to 100 lumens! It's unique co-molded lens/body design makes it compatible with regular seatposts and aero seat posts or frame shapes. A durable, waterproof construction provides ultimate protection in all weather conditions. The integrated USB stick makes recharging effortless. Enhanced with MOR Optics, side visibility and Mode Memory, this is the ultimate rear safety LED.

Strip Drive Front or Rear SRP £29.99 | Strip Drive Pro Rear SRP £39.99

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MBUK

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Look at the time!

Some mountain bikers love testing themselves against the clock. Others just love looking bling. Whatever you're into, the latest biking-friendly watches should make you tick.

GARMIN FENIX 3 SAPPHIRE

Sports watches have never looked so swish! Don't be misled by the metal strap and analogue-look digital face – if you're looking to smash Strava PRs left right and centre, this timepiece delivers, with GPS tracking and data capture, ANT+ and wi-fi connectivity, and up to six weeks' battery life.
£449.99
www.garmin.com

TOMTOM MULTI-SPORT CARDIO

This quirky GPS watch with built-in heart rate monitor comes in bright and bold colours with changeable straps. Strap one on and get tracking all of your favourite routes and efforts to become King of the Mountain.
£209.99
www.tomtom.com

POLAR V800

Loaded with gadgets and training aids, this high-tech GPS watch is ready to rumble in the jungle... erm, we mean in the woods. On your bike. You can sync it with your phone and hook it up to heart rate, speed or cadence sensors, or even a power meter. You'll never want to train without it again!
£314.50
www.polar.com

MIO ALPHA 2

This is a fitness freak's wet dream, offering accurate heart rate measurement, accelerometer based pace, speed, distance and calorie info, and Bluetooth Smart connectivity – and because it's water resistant to 30m you'll be able to keep training throughout the wet British summer!
£149.95
www.mioglobal.com

G-SHOCK GULFMASTER GWN-1000B-1BER

Casio's G-Shock watches are always bold and rugged looking, and this is no exception – maybe the G stands for Gangster? The Gulfmaster has a compass, barometer and altimeter, so there's no excuse for getting lost out in the hills.
£475
www.casioonline.co.uk

The Pulse

BEST IN SHOW

We've trawled the halls of the world's biggest bike show, Eurobike, to bring you the 2016 gear that looks like it's going to be the mutt's nuts, plus a few bits of kit with a more questionable pedigree. A couple of things stood out – there were fewer 'plus-size' bikes than expected (we'd expected a lot!) and e-bikes really seem to be gathering momentum. Sit back and feast your eyes on the coolest things we saw – there's more to follow next month.

Cannondale Bad Habit 1

We're definitely going to be seeing more and more 650b+ bikes in 2016. Cannondale are one brand embracing the 'semi-fat' trend. They've plus-sized the new Habit (see page 40), using WTB's 3in Bridger tyres and, on the top-spec model, WTB's Scraper i45 rims. Other key features include the Zero Pivot seatstays and a custom 55mm offset for Cannondale's Lefty fork, which is used on both Bad Habit models. **www.cannondale.com**



Intense M16 Carbon

We'd only just seen Intense's new aluminium M16 downhill bike but some snooping at Eurobike revealed this carbon beauty lurking at the back of their German distributors' booth. The full-carbon frame offers up 215 to 241mm (8.5-9.5in) of rear wheel travel, rolls on 650b wheels and sports a slack 63.5-degree head angle. **www.extrauk.co.uk**



Giro Montaro MIPS

Giro's latest lid is crammed with just about everything you could want to tackle a monster trail ride or rip a full-on enduro race. The peak can be adjusted to let your goggles sit on your lid when you're not wearing them, and there are strap grippers to help keep them in place. There's also an integrated camera/light mount as well as all the safety and fit features we've come to expect from Giro. **www.zyro.co.uk**



Evil Insurgent

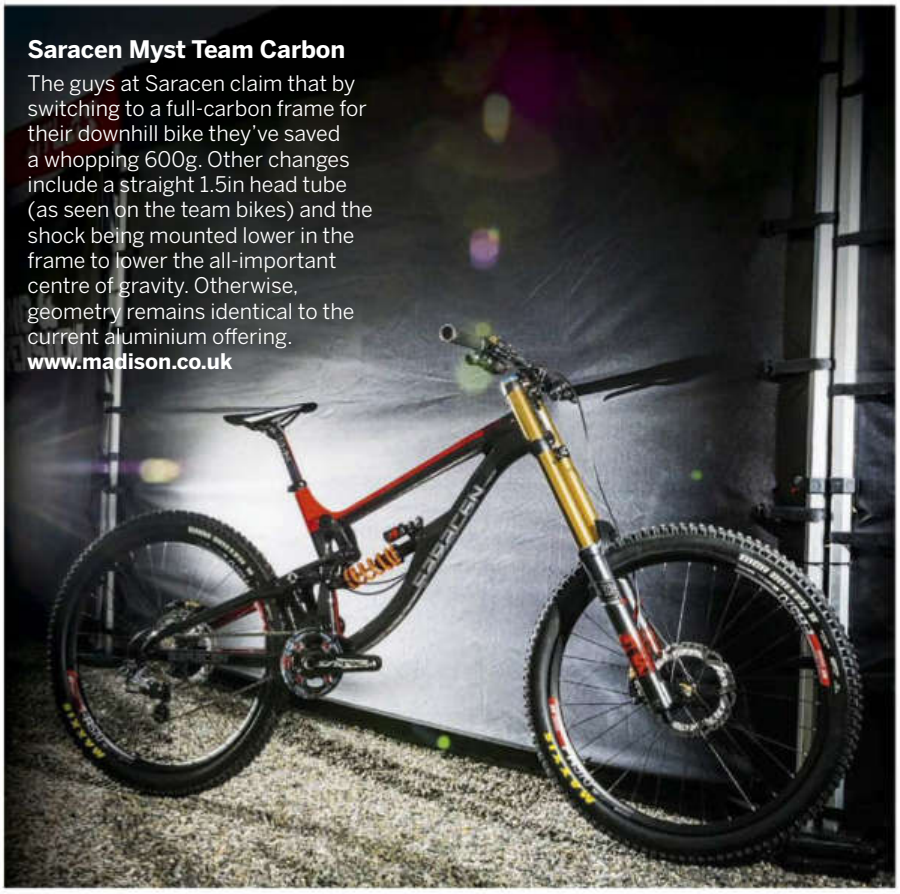
This new 650b wheeled trail bike certainly looks like it means business. It uses the Dave Weagle designed Delta System to pump out 151mm (5.9in) of rear wheel travel. With a 160mm fork in place, the head angle is a raked-out 64.8 degrees in the low setting and the BB height is a crank clipping 334mm. The full-carbon frame will be available in four sizes and includes some neat features like an integrated carbon upper chain guide. **www.silverfish-uk.com**



New for 2016

EURO TRASH?

NEXT BIG THING OR DESTINED FOR THE DUSTBIN OF HISTORY – YOU DECIDE...



Saracen Myst Team Carbon

The guys at Saracen claim that by switching to a full-carbon frame for their downhill bike they've saved a whopping 600g. Other changes include a straight 1.5in head tube (as seen on the team bikes) and the shock being mounted lower in the frame to lower the all-important centre of gravity. Otherwise, geometry remains identical to the current aluminium offering.
www.madison.co.uk



e*thirteen EXP cassette

The guys at e*thirteen have produced their own, rather interesting, take on the wide-range cassette. There's a choice of 11 or 10-speed blocks, each of which uses a tiny 9t smallest sprocket. The 11-speed version offers a massive 9-44t spread, while the 10-speed option covers 9-42t. You'll need an XD Driver body to fit either cassette to your wheel.
www.silverfish-uk.com



WTB PadLoc grips

WTB's new grips have a rigid internal sleeve with a wedge cut into the end that locks into a corresponding wedge cut at the end of the handlebar for extra security. Park Tool are making a saw guide so you can cut your bar at an angle, while brands including SRAM plan on selling pre-cut bars.
www.hotlines-uk.com



Pink to the MAXX

Not sure which MTB trend to jump on? This hub-geared fatbike with a chainsaw strapped to the back has several of the latest fads covered.



Tube delays

Can't be bothered to remove your rear wheel to fix a puncture? China's Vancom have you sorted with their double-ended inner tube.



Lightweight lefty

Van Nicholas had a plus-size bike on display fitted with this single-sided titanium rigid fork. It's eye-catching, but will it be more flexible foe than friend?



Legionnaire's lid

Channel your inner Roman with this transparent pisspot helmet from CGG. And when you're done with it you can use it as a bog brush.



Electric Avenue

Electric bikes were everywhere at Eurobike, and now any bike can be an e-bike with this Rubbee Drive kit. Just don't expect your tyres to last long...



New for 2016

BREAKING THE HABIT

Enduro bikes may be all the rage but Cannondale reckon their new short-travel steed is a better bet for most riders

Cannondale believe that an aggressive short-travel bike is something we all need in our lives. To that end they're produced the Habit, a 120mm (4.7in) trail bike with a super-stiff frame and fork, slack angles and some pretty unusual features.

The Habit is built from a 'BallisTec' carbon blend designed to give the bike a lively ride as well as light weight and strength. Its linkage-driven single-pivot rear end does away with conventional seatstay pivots, relying on flex in the stays instead. This saves weight and improves lateral stiffness. Another unusual feature is the rear brake mount – a 'flat mount' borrowed from road bikes, which allows for a narrower rear end but requires a unique pivoting dropout. And then there's the single-legged Lefty fork up front, a long-standing feature of 'Dales but one that continues to divide opinion. The rebound circuit has been revalved to counteract dive – something the fork has been criticised for in the past.

Cannondale reckon the Habit will be great for the DH rider wanting to go on epic trail missions, but also the XC rider seeking a slightly more capable ride, with its 67-degree head angle and long front centre (730mm on the large frame). Slinging a leg over the bike at its launch in Germany revealed that it climbs well but shines on the descents, where its aggressive geometry and supportive suspension mean you can really give it some welly despite its limited travel. Hitting corners and jumping into rocky sections with commitment, the bike bounced back screaming for more, with a playful feel we really enjoyed.

There are 10 models in the Habit line-up. Seen here is the £4,500 Habit Carbon 1, with a claimed weight of 11.6kg (25.5lb) and wishlist kit including a SRAM XX1 transmission and own-brand carbon wheels and bar.

Aggressive geometry and supportive suspension mean you can really give it some welly

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[O] STERLING LORENCE RIDER WADE SIMMONS

A PERFECT HEIST



27.5" or 29" wheels

"Ride it like you stole it" on ***Heist*** wheels. The wider internal rim widths create a better contact patch between tire and corner to give you traction for when you need it most. Ready-to-ride and easily-serviced, these Tubeless Ready wheels come with spare spokes, and endcaps for axle convertibility for whatever your getaway vehicle. Best of all, they are available in 3 width options for optimal use: 24mm, 27mm, 30mm for 27.5" or 29" wheels.

EASTON
EASTONCYCLING.COM

The Pulse

MBUK BIKEPEDIA

DIRT JUMP BIKE

Can't tell a dirt jump bike from a downhill race rig? We're here to help!

Jump bikes are good for jumping, pumping and street riding, and they're pretty cheap, as mountain bikes go. Slick tyres, small frames and limited gearing mean they're not the most versatile machines though.

Front brake and gears optional A simpler cockpit set-up, with no shifters or right-hand brake lever, means less to go wrong and makes certain tricks much easier. You rarely need huge stopping power or different gear ratios anyway.

Low seat Efficient pedalling isn't important on a jump bike. Some riders like to pinch the saddle with their knees but most slam it out of the way.

Stiff suspension Steep jumps can use up a lot of travel. Running higher pressures stops your bike bottoming out on take-offs.

26in wheels The reign of the 26in wheel may be over in many MTB disciplines but not dirt jumping. The smallest wheel size is easier to throw around and more durable – handy when learning to jump!

Fast-rolling tyres Slicks or semi-slicks are perfect for most jump spots, run at high pressures. The faster you roll, the higher you can go – DMR's Olly Wilkins recommends going no lower than 45psi.

JUMP TO IT
THE DIRT ON DIRT JUMPING

What to wear: DJ is a casual discipline, so don't turn up to the trails in your XC disco slippers or full-on DH pyjama race kit. Jeans, knee pads, a pisspot helmet and some good flat pedal shoes should do the trick.

Where to go: Jumping seems to be biggest in the South, probably because there aren't any mountains to ride. If you can't find any local trails, have a go at Chicksands in Bedfordshire, The Track in Cornwall or S4P Bike Park in Surrey. Be prepared to help dig if you want to ride!

Who to watch: UK riders Sam Pilgrim and Sam Reynolds are up there with the best in the world when it comes to throwing down tricks on 26in wheels.

Best of breed
Three dirt jump bikes to consider



CANYON STITCHED 180
Canyon's Stitched 180 is an entry-level aluminium DJ bike that'll help you earn your wings, with some great kit as standard including a coil-sprung Manitou fork. At this price, it looks like a steal.
£696.98 www.canyon.com



YT INDUSTRIES DIRT LOVE
The YT Industries Dirt Love is a bit more expensive, coming in at €1,038.80, but you get a RockShox Argyle fork and a tough Kore bar, stem and wheels to help with all of those cases you'll be doing as you progress!
Approx £764 www.yt-industries.com



NS BIKES METROPOLIS 1
NS Bikes' Metropolis 1 is a competition-ready DJ bike with a sturdy chromoly frame, Marzocchi Dirt Jumper 1 fork and geometry chosen by their pro riders – it's ready to fly!
£1,049.99 www.hotlines-uk.com

ubyk.

www.ubyk.co.uk

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MBUK STAR LETTER

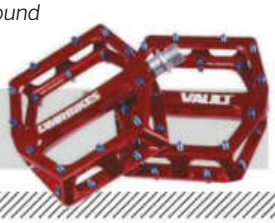


Even a broken back can't stop Martyn Ashton pulling stoppies – what a legend!

I'm sat at home recovering from a hip replacement at the tender age of 26. I can't leave the house for at least six weeks, so to keep myself entertained, along with Airfix models, puzzles and other stationary activities, my girlfriend bought me the August edition of *MBUK*. I've always been a keen mountain biker and, though only at a basic level of skill, I enjoy riding my bike around woodland tracks and trails. In your magazine I saw the feature on Martyn Ashton getting back on his bike after his accident and saw the video of his first descent on his modified bike, which was incredibly heartwarming and an inspiration. I can't compare my circumstances to his, but watching that video just made me look forward to getting strong enough to be back on my bike and doing what I enjoy the most.

MATT IVORY, DEVON

Martyn's an inspiration to all of us, showing amazing skill before his accident and incredible courage since. If you haven't seen his other vids, put down that model Spitfire, scrape the congealed glue off your fingers and search YouTube for Road Bike Party. *If you're lucky you might even find a grainy copy of the classic* Dirty Tricks & Cunning Stunts *or* Chainspotting *videos that he did with* MBUK *back in the days of super-baggy jeans and wraparound sunglasses!*



If your letter gets picked as the Star Letter, you'll receive a pair of DMR Vault pedals worth £99.99, courtesy of Upgrade (**www.upgradebikes.co.uk**). For full *Mountain Biking UK* terms and conditions, see p16.

Gone but not forgotten

On 7 April 2014 my son Charlie went out for a bike ride and never returned. We found his body on a track near our home. We'll never know what happened that night and will have to live with that for the rest of our lives. Not only was Charlie my son, he was my best friend. We were both keen mountain bikers and he'd built his own hardtail from scratch. We were frequent visitors to BikePark Wales and the Forest of Dean. I thought you might like to see a picture of the tattoo I've had done in Charlie's memory.

STEVE TUGWELL, SOMERSET

We were shocked when we heard what had happened to Charlie, and can only begin to imagine the devastation you must feel, Steve. The tattoo is a lovely tribute.



Thanks to his tattoo, Steve's son Charlie will always be with him, and doing what he loved best too

Reformed roadie

After 10 years and many road biking miles I decided to sell one of my road bikes and get myself an MTB again. I picked up *MBUK* and the cover convinced me I was making the right decision – I wanted a bike that would put a smile on my face, not a grimace! I can't believe how much more encouraging and passionate the MTB community is compared to the roadie snobs who just bitch and moan about stuff. I've been out on my new bouncy bike and it's great. I can't wait to hit some »

SOCIAL STUFF

@ MBUK FORUM
www.bikeradar.com/forums

How far in a day?

There and back again – **cooldad**

Depends on the terrain, etc, but up to 100 miles if it's relatively easy going. Quantocks or Exmoor, I'd say 40 miles max – **RockmonkeySC**

I lose interest after five hours – **Kajjal**

My longest ride was 135 miles, although I could have gone further. I've felt worse after a fast-ish trip around Cannock. How far you can go depends on the terrain and how fast you're trying to go – **The Rookie**

FACEBOOK
www.facebook.com/MBUKMag

Best MTB race/event?

'Ard Rock Enduro for sure. Nice and relaxed, and no bullshit. Proper mountain biking – **Rhys Williams**

EWS in Tweeddale. Just an awesome vibe with an incredible mix of trails – **David Lloyd Hudson**

Pass'Portes du Soleil. Done it for the past four years – cracking riding! – **Andy Church**

TWITTER
http://twitter.com/mbukmagazine

Who's keen to try a plus-size bike?

I've no intention of ever buying one. Can see it being a benefit on a hardtail though – **@HankBizzle**

Already have. Riding 29+, tried 650b+. Good ones are outstanding. Bad ones are pigs. More to it than sticking big wheels on – **@AndyTaylor_isme**

trails and be a part of this great sport again.

JOSH LIPPETT, VIA EMAIL

Yep, there's no denying road riding is good for fitness, but it just doesn't deliver the same number of smiles per mile as mountain biking can.

Let's all be friends

As a keen cyclist and long-time reader of *MBUK* I was a little put out by the '20 reasons dirt beats tarmac' article in your July issue. I enjoy days and nights out on my local trails with my MTB riding buddies and that all-important post ride beer, but I also enjoy getting in the miles on my road bike. Not all of us road riders shave our body parts, and there's a section of MTB riders who do exactly that and wear the dreaded Lycra too! If it wasn't for the miles I put in on the road my fitness on the MTB would be half what it is, and if it wasn't for my MTB handling skills I'd have had a fair few accidents on the roads. As cyclists we should be embracing our differences, not slagging each other off. In the end, whatever form of bike you're on it's just two wheels, a chain and somebody making it go!

DARREN PLATTS

That article was written with tongue lodged firmly in cheek. Whisper it quietly but most of us at MBUK *ride road bikes too, on occasion. But you're right, us cyclists do need to stick together. We're one of the few groups it's still acceptable to hate in public. That said off-road is clearly better though!*



Shaven or hairy, drivers hate us all equally!

The small print

Email your letters and photos to **mbuk@bikeradar.com**.

- The 'Star Photo' winner will receive a Lezyne CNC Dirt Floor Drive pump worth £89.99.
- The 'That's Gotta Hurt' winner will receive a Lezyne Port A Shop toolkit worth £99.99.
- The 'Hardcore Heroes' winner will receive an Effetto Mariposa Caffélatex Tubeless Conversion Kit worth £49.99

Turn to p16 for full *Mountain Biking UK* terms and conditions.



MBUK THAT'S GOTTA HURT

"Broken upper arm, broken collarbone, all left ribs broken, punctured lung, concussion and damaged lower vertebrae. But the bike made it through unscathed" – sounds like **IAIN MCGOWAN**'s got his priorities right!

WIN Lezyne tool package



Eight-year-old **MILAN MACHACEK** hits the aptly named Panoramic trail in Châtel, Switzerland. Pic by his proud dad, **VLADAN**



SHAUN HOLDEN, 11, sends a drop at the Comrie Croft trail centre in fine style. Pic by his dad, **IAN**



Here's **STEVE PORTER** from Wolverhampton giving Superman a run for his money



MBUK HARDCORE HERO

There must be something in the water down in Devon – we've had loads of entries from Tavi Woods lately. Here are **OLI FORCE** (front) and **JAMES USHERWOOD** hitting the road gap, while **BRECON** watches from below

WIN Effetto tubeless kit

MBUK STAR PHOTO



CHARLIE FIRTH flies through the trees in the Surrey Hills. Pic by **BRUCE MCCORMICK**

WHAT YOU COULD WIN...

The Lezyne CNC Dirt Floor Drive track pump is made from durable CNC machined aluminium and has an oversized barrel, piston, hose and connectors to deliver twice as much air per stroke and quickly fill tyres or seat tubeless tyre systems. For more info, visit **www.upgradebikes.co.uk**.



There's coming up short and then there's coming up short! **RACHAEL GRANT** sent us this pic of her fiancé **GARY SMITH**'s "epic failure" at Les Gets Bike Park



COLIN LEGG, 63, proves you're never too old to get rad, dropping in at BikePark Wales on his Specialized Stumpjumper



GAGE GILLINGS soaks in the views while descending the Jacksons trail in Moab, Utah

TWEETS OF THE MONTH



Me and @gregminnaar tryna suss out how @aarongwin1 went so quick yesterday – **Josh Bryceland** and his teammate weren't the only ones flummoxed by Gwin's winning margins in this year's DH World Cup series





Getting in touch with my inner *Karate Kid* before tomorrow's race #kungfutime #battleready #mammoth #natchamps – so that's **Gwin**'s secret! Wax on, wax off...





Wow! Can't believe I have WON the World Cup overall already!! Pretty mental! Thanks my lush team, sponsors & DH fans! – That's right, **Rachel Atherton** has been so dominant this season that she took the women's title with two races still to go. Did that mean she relaxed in Windham and Val di Sole? Nope, she still crushed the competition!



There's another good story behind this one. I'll show you the video later! Thanks @TroyLeeDesigns. Isn't she cute?? – **Brendan Fairclough** has a new nickname, Bambi, as this custom painted lid shows. And all because he got a bit wobbly following a crash



INSTAGRAM

http://instagram.com/mbukmagazine



@derpybiscuits didn't pick the best of days to conquer Snowdon!



"Ever get that feeling something's behind you?", asks **@s44mdm** at Delamere

FOX FACTORY

36

THE CHOICE OF CHAMPIONS



The choice of **2014 Enduro World Series** Champions **Jared Graves** and **Tracy Moseley**

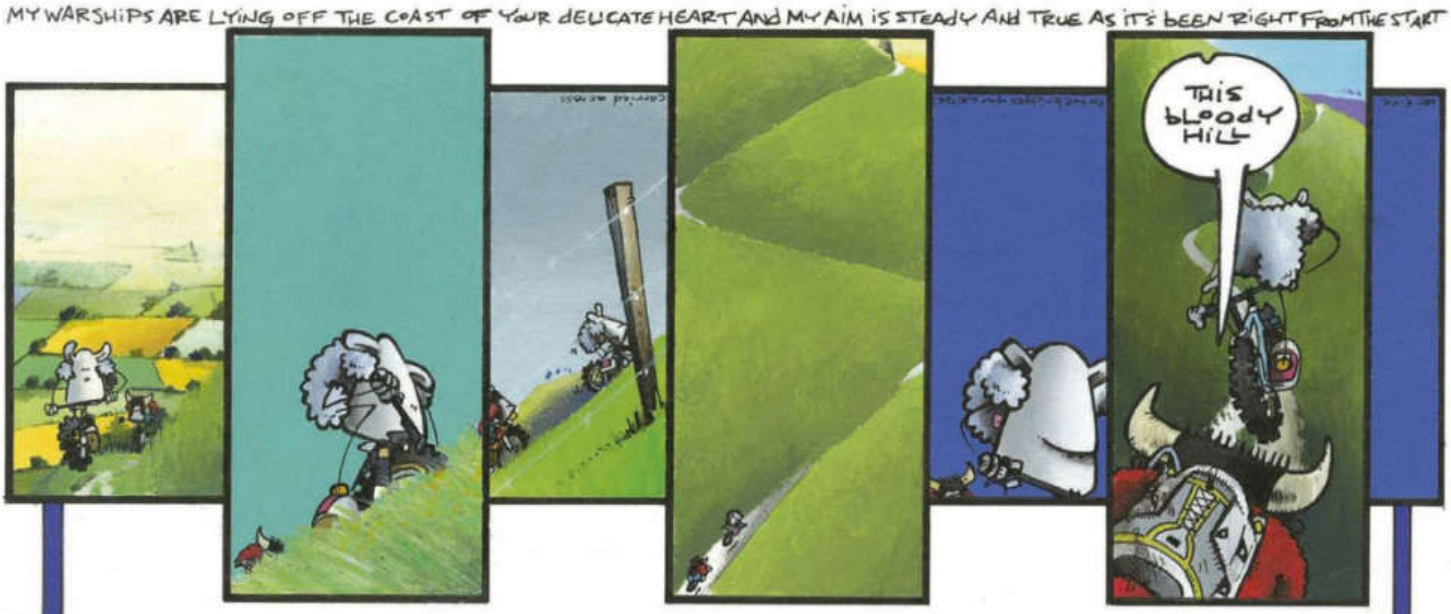
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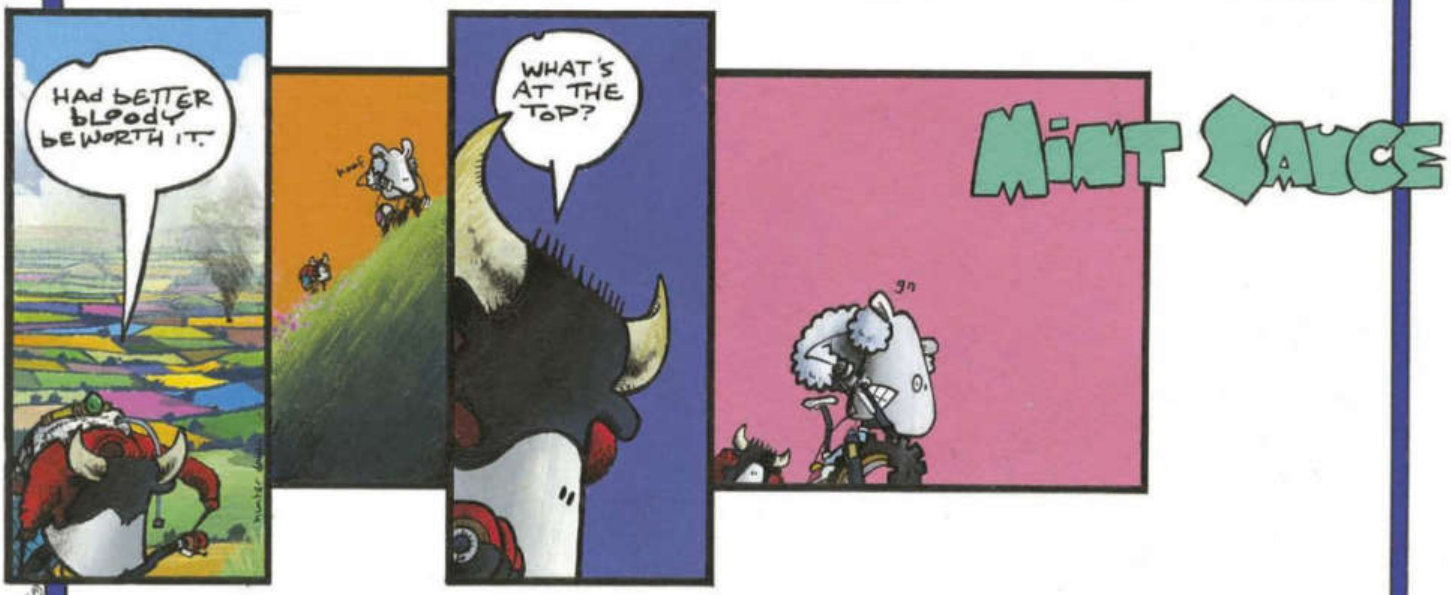
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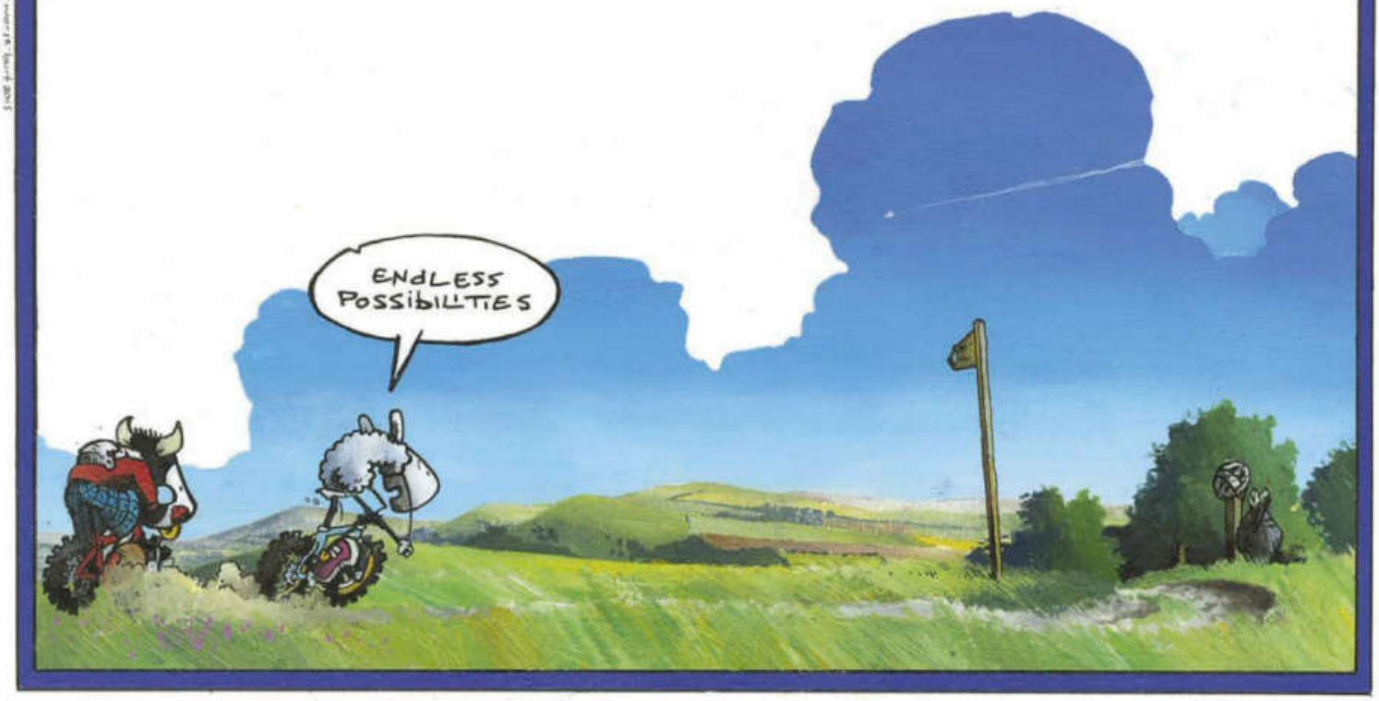
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MY WARSHIPS ARE LYING OFF THE COAST OF YOUR DELICATE HEART AND MY AIM IS STEADY AND TRUE AS IT'S BEEN RIGHT FROM THE START









BATTER INTO A ROUGH SECTION HARD AND THINGS REMAIN COMPOSED ENOUGH FOR YOU TO STICK YOUR LINE WITH CONFIDENCE

MBUK FirstRides

FEATURING: Santa Cruz Nomad C X1 AM // Kona Honzo AL/DL // Calibre Bossnut



The murdered-out frame looks great, but kit is more basic, than bling



Santa Cruz's cheaper carbon blend is heavier but feels good on the trail

SANTA CRUZ NOMAD C X1 AM

FRAME C-level carbon fibre, 165mm (6.5in) travel **FORK** RockShox Pike RC, 160mm (6.3in) travel **SHOCK** RockShox Monarch Plus RC3 DebonAir **DRIVETRAIN** SRAM X1 w/ e*thirteen XCX+ chain guide (1x11) **WHEELSET** WTB Frequency i25 Team rims on Hope Pro 2 EVO hubs, Maxxis High Roller II EXO TR 27.5x2.4in tyres **BRAKES** Shimano SLX **BAR/STEM** Race Face Respond, 785mm/Race Face Turbine, 60mm **SEATPOST/SADDLE** RockShox Reverb Stealth/WTB Volt **WEIGHT** 13.4kg (29.6lb), size medium without pedals **PRICE** £4,799 (complete bike) **CONTACT** Santa Cruz Bikes UK www.santacruzbikes.co.uk

Since the Nomad had its extensive overhaul last year we've been gagging to get a ride in on the new bigger wheeled, bigger travel version of Santa Cruz's slacked out trail bike to see just how these changes translate out on the trail.

The frame

We opted to ride the cheaper Carbon C frame. Santa Cruz say you get the same strength and stiffness as with the higher grade CC carbon lay-up, at the cost of an extra 250-280g.

The carbon rear triangle is attached to the mainframe via two forged links, which dictate the path of the rear wheel as it moves through its 165mm (6.5in) of travel, controlled by a RockShox Monarch Plus shock.

The bike is designed to use a single chainring only, underlining its gravity riding bias. The geometry tells a similar story, with a slack 64.9-degree head angle, short 433mm chainstays and low 340mm BB.

The kit

We rode the 2015 Nomad C. For 2016 the bike is almost identical but comes with SRAM's cheaper GX 11-speed transmission and costs £200 less as a result.

The spec is solid – as it should be at this eye-watering price – with predictable control from the front and rear suspension units, grippy tyres that are set up tubeless, and a bar that's wide enough for just about everyone.

The ride

Punch at the pedals and the Nomad springs into action, feeling much lighter on the trail than its weight and travel might have you believe. Things feel sprightly and taut as you get up to speed, with next to no pedal bob when cranking hard.

Thanks in part to the 74.3-degree seat angle, the Nomad offers a good position from which to attack – rather than endure – technical climbs. The medium frame gave our 5ft 8in test pilot enough breathing room when seated, although as current trail/enduro bike standards go, the 584.2mm effective top tube isn't particularly stretched out. Still, we had no issues with the sizing.

On the rough, steep, technical trails where we spent most of our test time, we were impressed with the Nomad's balanced suspension and the amount of grip on offer. Batter into a rough section hard and – thanks to that low slung, slack geometry – things remain composed and controlled enough for you to stick your line with confidence while the suspension just gets on with the job at hand.

When you do get the chance to get airborne, the Nomad isn't easy to fluster and is more than at home taking on the bigger booters out there. There's enough progression and support at the rear to ensure you can really work the bike through turns or up take-offs as hard as you dare, then deal with the landings, even if you've overshot slightly. **ROB**

FirstRides RATED

The Nomad has proven itself an impressive all-rounder, but that sort of pedigree doesn't come cheap

★★★★☆

FirstRides Ratings

WE BASE OUR SCORES ON VALUE FOR MONEY AND PERFORMANCE

★★★★★ **EXCEPTIONAL:** A genuine class leader

★★★★☆ **VERY GOOD:** One of the best you can buy

★★★☆☆ **GOOD:** It'll do the job and do it well

★★☆☆☆ **BELOW AVERAGE:** Flawed in some way

★☆☆☆☆ **POOR:** Simply put, don't bother!





↑ The Honzo's geometry is sorted, but its stiff alloy frame won't suit all riders

↓ Kona have a strong heritage when it comes to making hardtails



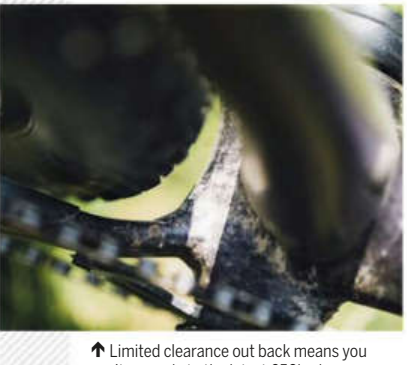
KONA HONZO AL/DL

FRAME Butted 6061 aluminium **FORK** Fox 34 Float Performance, 120mm (4.7in) travel **SHOCK** N/A **DRIVETRAIN** Shimano Deore w/ Race Face AEffect cranks (1x10) **WHEELSET** Shimano Deore (F) and Novatech (R) hubs on WTB STP i29 TCS rims, Maxxis Minion DHF EXO TR 29x2.3in (F) and CrossMark EXO TR 29x2.25in (R) tyres **BRAKES** Shimano Deore **BAR/STEM** Kona XC/BC, 780mm/Kona XC/BC, 55mm **SEATPOST/SADDLE** Kona XC/BC/WTB Volt Sport **WEIGHT** 12.4kg (27.3lb), XL size without pedals **PRICE** £1,799 (complete bike **CONTACT** Kona www.konaworld.com

While most aspire to shred trails on full-suspension bikes, Kona are adamant that the hardtail is far from dead, and they've set out to prove it with the Honzo 29er.

The frame

Last year's Honzo was steel but both bikes in the 2016 range are alloy (though a titanium frame is also available). This, say Kona, has cut up to 40 per cent from the frame weight – good news, because the 2015 Honzo wasn't exactly svelte. The frame has been lengthened too, with a reach of 485mm on the XL size tested, while a PF92 BB, big weld areas and 148x12mm rear axle assure stiffness.



↑ Limited clearance out back means you can't upgrade to the latest 650b+ hoops

The kit

Fox's latest 34 Float fork is plugged in up front. The 120mm (4.7in) of travel is far better controlled with the new FIT4 damper than on previous models, and the new chassis is stiffer too, offering real point-and-shoot performance on a wide range of trails. The Shimano Deore based 1x10 transmission is dependable and comes with a clutch-equipped rear mech, and the matching Deore brakes are good too.

Although the seat tube is wide enough there's no dropper post, which is a real shame – but at least the frame can take a stealth-routed upgrade. WTB's tubeless i29 rims give a really good profile to the Maxxis Minion DHF and CrossMark tyres, both of which benefit from tough EXO sidewalls and tubeless compatibility. The level of grip on offer makes them ripe for alpine adventures. Up front, the short stem/wide bar combo is a winner, allowing you to wrestle the bike through sections while maintaining relatively snappy handling.

The ride

The long, low and slack nature of the Honzo makes it well at home on steep, technical terrain. Hitting big alpine descents blind, with unexpected drops, rocks and switchbacks, was far more manageable on the Honzo than we'd have expected of a hardtail.

The stiff frame means power transfer is good, though we'd have preferred a wider range cassette than the 11-36t option specced here when the climbs got steep. The 32t chainring does help on the ups though.

That stiffness is also the Honzo's weakness, with rough descents leaving you battered and bruised. A 2.4in rear tyre would improve comfort, and it's a shame the latest 'half fat' 650b+ rubber won't fit inside the short chainstays – they're just too narrow.

On cross-country trails, the unrelenting stiffness also interrupts your pedal stroke – sitting down is just too lumpy and when you're stood up your body weight gets thrown about, compromising pedalling and, at times, traction too.

That said, if you're looking for a bike to spin up and batter down the most technical trails you can find and you're a fan of a rigid back end, we reckon you can't go wrong with the new Honzo. **TOM**

FirstRides RATED

Stick to the steeps and you'll be laughing, though super-stiff back end does compromise comfort

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↑ The Bossnut has good kit for a grand but it's the geometry that really impressed us

↓ RockShox provide the decent suspension units, including a through-axle Sektor fork



CALIBRE BOSSNUT

FRAME 6061 aluminium, 130mm (5.1in) travel **FORK** RockShox Sektor Silver Solo Air, 130mm (5.1in) travel **SHOCK** RockShox Monarch R **DRIVETRAIN** Shimano Deore (2x10) **WHEELSET** WTB ST i23 rims on Shimano Deore hubs, WTB Vigilante 27.5x2.3in (F) and Bee Line 27.5x2.2in (R) tyres **BRAKES** Shimano M506 **BAR/STEM** Ritchey Trail Rizer, 760mm/Ritchey 4-Axis, 70mm **SEATPOST/SADDLE** Ritchey/WTB Volt **WEIGHT** 14.4kg (31.7lb), 17.5in size without pedals **PRICE** £999.99 (complete bike) with £5 GO Outdoors discount card, £1,299.99 without **CONTACT** GO Outdoors www.gooutdoors.co.uk

Creating a good full-suspension bike that comes in under that magical £1,000 mark is no easy feat. We hit the hills on GO Outdoors' first foray into full bounce to see whether they've hit the mark.

The frame

The Bossnut's frame has some nice touches, including a tapered head tube and smooth welds throughout the front triangle. The nicely progressive 130mm (5.1in) of rear travel is controlled by a RockShox Monarch R shock, which is basic but works well. It's the sizing and angles we're excited about though. It's a great bike for a first-timer, but the geometry means it can be ridden harder than the price tag might suggest. Our 17.5in test bike had a relatively slack 66.7-degree head angle, roomy 585mm effective top tube and 435mm chainstays, which were short enough to keep things playful in tighter turns without hampering stability at speed.



↑ A Monarch R shock keeps the 130mm of rear wheel travel nicely controlled

The kit

The Monarch shock is paired with a Sektor fork up front, complete with 15mm axle to ensure accurate steering. The Ritchey finishing kit looks good and works well, and it's good to see a wide 760mm bar. Getting a Shimano Deore transmission complete with clutch rear mech at this price is a real bonus.

The ride

The low slung, relatively slack geometry means the Bossnut exudes confidence as soon as its tyres touch dirt. The frame proportions and the position these numbers put you in on the bike feel neutral and prompt more aggressive riding than you'd expect at this price. There's enough breathing room in the cockpit – thanks in part to the 70mm stem – to let you climb comfortably without any front wheel lift, and the 2x10 gear range lets you grunt up just about anything.

Hit a technical descent though, and you'll see why the Bossnut stands out among its similarly priced rivals. There's enough progressivity and control at the rear to encourage high-speed hooliganism, and when paired with the capable geometry, this makes for some seriously impressive handling.

It took us a while to settle on a shock pressure, sag level and rebound setting that allowed us to make the most of the 130mm of rear travel. Because the shock feels quite heavily damped, it's difficult to get the bike feeling active and lively. We ended up running the rebound damping a few clicks from fully open, so lighter riders may run out of adjustment before they can set it fast enough.

This is barely even a niggle at this price though, and we never struggled with the bike wallowing in the turns or felt like it lacked support when pushed harder. In fact, the low 335mm BB height and through-axle fork give the Bossnut some serious corner-carving credentials. Add the wide bar and aggressive front/fast rolling rear tyre combo and you're left with a bike that can run rings around far more expensive machines. **ROB**

FirstRides RATED

Everything from the spec to the geometry makes it look and ride like a much more expensive bike

★★★★★

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MBUK First Look

Tasty bits of new kit to get excited about





ONZA PAYOFF

ANYONE WHO'S BEEN into the sport for a while will remember Onza. We all yearned for their bar ends or grips at some point, right? Though things went quiet for these old-school pioneers for some time, they're now back with two new steel frames. Here we have the Payoff, which is crafted from double-butted 4130 chromoly and sports big 29in hoops for maximum trail slaying potential. There's a modern tapered head tube to help bolster front end stiffness, while a little further back Onza have opted to use a skinny 27.2mm seatpost to add to the comfort built into the steel chassis. Our 1x10 Shimano equipped test rig sports a 120mm (4.7in) travel RockShox Revelation fork and a host of own-brand Onza finishing kit, which looks well tidy.

£1,450 Todays Cyclist www.todayscyclist.co.uk

FABRIC CELL SHALLOW ELITE SADDLE

IF YOU EVER thought things were slowing down when it comes to saddle design, think again. Fabric seem to really be pushing things forward, from their sleek ALM minimalist offering to the unusual-looking air-sprung number we have here. Each of the internal 'Hex-air' cells is designed to compress individually, helping the saddle to conform to the shape of your rear. Combined with the relatively wide 155mm width, this should make for a comfy ride. Weight wise we're looking at 359g with chromoly rails, which isn't bad considering the price tag. Keep an eye out for a full review soon.

£49.99 Fabric www.fabric.cc





BONTRAGER LITHOS HELMET

WE WERE BIG fans of the previous Lithos and panicked a little when it disappeared from Bontrager's website. Fear not though, because the Lithos is back, sporting a burlier design with more features, better coverage and a slightly higher price. On top of the good looks and vast number of vents, this lid sports some seriously cool features, including a 'Blendr' integrated accessory mount, which will happily accommodate an action camera or helmet light. There are three sizes and three colour options to pick from, one of which is a rather tasty matt blue finish called Stratosphere. We'll have a full review soon.

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SuperBike MBUK

#59 Rémi Thirion's Commencal Supreme DH V4



WHY IS THIS A SUPER BIKE?

- Super-high main pivot gives a fully rearward axle path designed to eat up big hits, while idler roller minimises the effect of pedalling on the suspension
- BOS provide the full works, in the form of custom-tuned air-sprung dampers at both ends
- With a full World Cup level bling build that includes kit from Renthal and SRAM, this machine is nothing short of drool-inducing

Supreme Ruler

Commencal's new downhill bike is designed to conquer the gnarliest tracks

Developed with team racer Rémi Thirion, the suspension system on Commencal's new Supreme DH V4 is a departure from the downhill race bike norm. Bolt on a dream spec list and you have one very special bike. We caught up with Rémi and his mechanic Damien to get the lowdown.

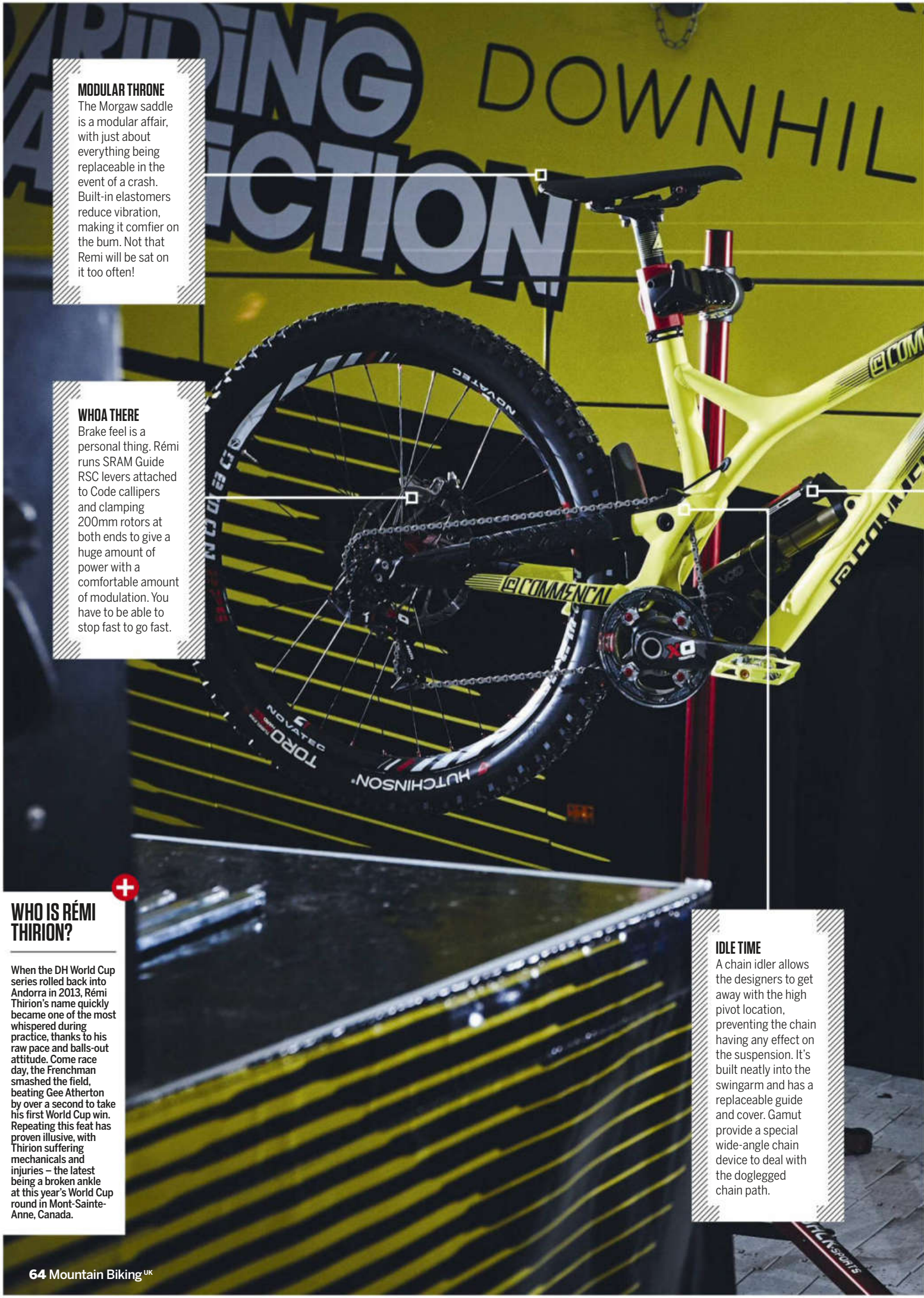
High roller

Like many modern DH bikes, the V4 uses a linkage-driven single-pivot suspension design. But that's where the similarities end. Instead of the main pivot being down behind the chainring, here it's halfway up the seat tube, giving a fully rearwards axle path. This is great for bump eating but gives a unique ride feel. A high pivot also causes chain growth, which can be felt through the pedals, but Commencal get around that by fitting an idler roller.

Because the new bike has been designed with Rémi in mind he's able to ride a standard, off the shelf, medium size frame. Plenty of adjustments are available – from the head angle and top tube length (via headset cup changes) to the chainstay length and BB height (by swapping dropouts) – but Rémi usually keeps everything in the stock position.

BOS make some of the best performing forks and shocks out there, and Rémi's are custom tuned to suit him and his bike – though Damien says the changes from »

Words Jake Ireland **Pics** Steve Behr



MODULAR THRONE

The Morgaw saddle is a modular affair, with just about everything being replaceable in the event of a crash. Built-in elastomers reduce vibration, making it comfier on the bum. Not that Remi will be sat on it too often!

WHOA THERE

Brake feel is a personal thing. Rémi runs SRAM Guide RSC levers attached to Code callipers and clamping 200mm rotors at both ends to give a huge amount of power with a comfortable amount of modulation. You have to be able to stop fast to go fast.

IDLE TIME

A chain idler allows the designers to get away with the high pivot location, preventing the chain having any effect on the suspension. It's built neatly into the swingarm and has a replaceable guide and cover. Gamut provide a special wide-angle chain device to deal with the doglegged chain path.

WHO IS RÉMI THIRION?

When the DH World Cup series rolled back into Andorra in 2013, Rémi Thirion's name quickly became one of the most whispered during practice, thanks to his raw pace and balls-out attitude. Come race day, the Frenchman smashed the field, beating Gee Atherton by over a second to take his first World Cup win. Repeating this feat has proven illusive, with Thirion suffering mechanicals and injuries – the latest being a broken ankle at this year's World Cup round in Mont-Sainte-Anne, Canada.



NITPICKING
It doesn't take more than a glance at the front end of Rémi's V4 to see how meticulously it's set up. A ziptie through the stem guides the cables behind the number board plate and even the SRAM logos on the headset spacers line up. You can't afford to miss anything at this level.

NULL AND VOID
Air shocks are catching on for DH now that problems with overheating and inconsistent damping have been overcome. The V4 is designed around the progression rate of an air shock, and the long 267x89mm size maximises surface area for cooling and allows a lower leverage ratio for precise damping adjustment.

the stock units are minimal. The frame was designed around an air shock so Rémi uses a BOS Void out back. He has no complaints about the feel and likes the fact the air spring is a bit more progressive than the coil springs he's grown up using for downhill. The Frenchman doesn't make many adjustments to the damping to suit different tracks. He usually runs around 20 per cent sag, which makes for a ride that would feel harsh to any of us.

Despite not touching the shock's adjusters very often, Rémi does change the set-up of his BOS Idylle RaRe fork for different tracks. The air-sprung fork has what looks like a pressure release valve on its lowers, but Damien says it's actually an air valve so they can add more pressure to help it stay up in its stroke, giving Rémi a feeling of more support.

Personal preference

Renthal provide Rémi's cockpit, in the form of a 50mm Integra II direct-mount stem and an aluminium Fatbar – apparently he prefers it to the carbon version – with a 30mm rise cut down to 770mm. He likes the front end high, with 20mm of spacers under the top crown of the fork. Looking over the bike, we noticed that Rémi's HT X1 clipless pedals were missing their pins. We were assured that he does use them with pins in too, but we've spotted the pins missing in a few riding shots, presumably because it makes it easier for him to clip in and out.

Being sponsored by Hutchinson means Rémi gets to try out prototype tyres, giving him another opportunity to change things to suit different courses. The Hutchinson rubber is mounted tubeless on Novatec Demon wheels, which got the nod from Damien when we asked if they were holding up well to a World Cup pounding.

As with most of the mechanic-maintained World Cup bikes, Rémi's is meticulously built with crazy attention to detail. A MarshGuard number board holder allows the brake hose and gear cable to sneak in above the number board to run towards the back of the bike. Cable guides are all aluminium and bolted into the frame for security, while any blank holes are neatly taped off to stop dirt or water getting into the frame. A bolt-in rear mudguard stops any flying debris heading towards the shock and linkage area and finishes the back end off perfectly.

We were gutted to see Rémi injure himself in Mont-Sainte-Anne, but we're sure he'll be fighting for that top step of the podium again as soon as he's fixed and this bike certainly won't be slowing him down.

THE ESSENTIALS

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DAYS OF TUNDRA

Iceland's riding is no easy cruise – it's just as wild as its shark and puffin based cuisine

Words Tom Marvin **Pics** Russell Burton



Climbing to the start of the trails takes effort but the payback is more than worth it

The wind blows at what feels like hurricane force. Russell, our snapper, is cowering behind a rock, trying to keep the sand and dust from obliterating thousands of pounds worth of camera gear. A gentle kicker is too tempting to miss, but the crosswind snatches my wheels, pushing me way off line. This wouldn't normally be a problem, but when the line is a thin sliver of singletrack running along the top of a ridge with a death-defying 100m vertical drop to one side and the loosest, dustiest rock garden imaginable on the other, suddenly line choice is all that matters.

This is our introduction to Iceland. Not your most obvious mountain bike destination, but one that's experiencing a boom in exposure. Steve Peat, Hans Rey and Wade Simmons have all spent time here recently pushing their limits, along with FEST Series favourite Graham Agassiz – and now it's our turn.

The raw beauty of one of the world's youngest pieces of land alone makes Iceland worth visiting, but the tantalising mix of trails, from flat-out exposed long-distance singletrack to steep and loose jaw-dropping descents, makes for a destination as extreme as the weather conditions.

Our guide Magne, from Icebike Adventures, isn't fazed by the howling wind. The sun has been shining all day and the ground is as dry and dusty as the most blown-out berms in a Middle Eastern DH course, so these are prime conditions for Iceland, where it can rain pretty much non-stop for three weeks at a time.

Our ridgeline traverse is the first of three trails we're going to ride today. We're only 30 minutes' drive from central Reykjavik, up on some hills that dominate the landscape as you drive from Iceland's main international airport, Keflavik. The wind that sends a fine dust cloud billowing behind our wheels has come south across the Atlantic from Greenland, unhindered by any other land mass on its way, and it feels like it too.

Lunar landscape

At the bottom of the climb we're surrounded by tourists, the bravest of whom have ventured 50m from their tour bus to glance briefly at sulphurous steam coming out of a vent. To get to the trail we need to hike for 25 minutes up an old volcano, where red ochre dirt and pumice stone that were thrown out of the crater at hundreds of degrees Celsius provide meagre traction for our shoes and tyres. The terrain is pockmarked with different colours and textures, with each turn bringing something new. Vegetation cover is minimal, save for mosses and lichens that cling to life on the harsh slopes.

Once we top out, our efforts are rewarded with a ridgeline trail that disappears into the distance. It's not all downhill, and we certainly have to work for our fun, battling short climbs and occasional headwinds, but the twisting, dusty singletrack »

The tantalising mix of trails makes for a destination as extreme as the weather conditions



Wind-dried fish is an Icelandic delicacy, but it doesn't half whiff



Serious terrain calls for serious vehicles, like our guide's modified Land Rover

WHERE IN THE WORLD ICELAND



Trail 1: Loose, dusty singletrack in a lunar landscape in the hills outside Reykjavik.

Trail 2: Steep, blown-out descent in virgin territory – proper 'foot out, flat out' stuff.

Trail 3: Once a classic route past geothermal springs, but now overrun by tourists.



There may not be chairlifts, but you won't find scenery like this anywhere in the Alps

leaves us aching for more. Down at the bottom we jump into Magne's modified Land Rover. Regular road-going rubber is useless where we're headed, so his 44in low-pressure tyres and seriously raised suspension are a necessity. We leave the tarmac and head up a rough access track, the vehicle using every inch of its travel to stay stable.

Seeking nirvana

We're soon at the bottom of another push up a slope, still in the hills bordering Reykjavik. This climb is steep and loose. Grit fills our shoes and we're half-wishing it were lunchtime. Russell is having the time of his life taking snaps in one of the most epic landscapes he's worked in though, so we keep pushing on, searching for yet more trail nirvana.

While our first trail was fast and flowy, the second is a complete contrast. Up top we pass a small lake, surrounded by boggy grassland. Fortunately the track circumnavigates the worst of the sludge and we're able to pedal through a boulder-filled traverse over to the other side of the flat-topped hill. From here we can spot the Land Rover in the distance, a couple of hundred metres below us. Magne has driven round as we

We hit a section of switchbacks with minimal traction, mid-turn steps and yet more rocks



Spectacular scenery and roost – two key ingredients of great mountain biking

climbed up and took snaps, and he joins us having pushed up the descent we're about to hit.

From where we stand, the trail drops away. The line in is littered with rocks that are just waiting to snatch at our rear mechs. A little shimmy here and there is required before we properly drop in. We're riding it blind, but the steep, rocky trail is so loose our braking distances are far longer than usual. With whoops and hollers we hit a section of switchbacks far faster than we should. Minimal traction, mid-turn steps and yet more rocks trying to steal our rear mechs or shave some skin off our shins mean a white-knuckle ride – at times it feels like we're riding way beyond our skill set. Adrenaline keeps us focused on where our front wheels are and where they need to go next, and sheer luck keeps us from having any proper stacks.

Russell has spied an even better vantage point to take photos from and it takes very little encouragement for us to push back up and ride the descent again, even harder. Second run done »



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Riding through geothermal activity was a surreal experience

THE LOWDOWN
ICELAND

GET THERE

WOW Air fly from London Gatwick to Reykjavik seven days a week, with up to two flights per day. Prices start from just £49 each way, including taxes. Bike carriage starts from £26 for a bicycle weighing up to 23kg.

WHERE TO STAY

Hotel prices are comparable to London, but Airbnb throws up numerous more budget-friendly accommodation options.

WHERE TO RIDE

We spent the day riding with Icebike Adventures (**www.icebikeadventures.com**), based in Reykjavik. Magne provides guided trips lasting from a few hours to as many days as you can manage. Flying to the US or Canada? Take a stopover in Reykjavik and he can pick you up from the airport, take you riding and drop you back in time for your connecting flight!

BIKE HIRE

Hjólasprettur (**www.hjolasprettur.is**), Iceland's Focus dealer, provided us with Focus SAM bikes. They offer a wide range of spares and servicing, and are all-round nice guys.

WHAT ELSE TO DO

Iceland is an adventurer's paradise. For a country with a population only marginally bigger than Cardiff's, there's plenty to do. Long-distance hiking trails criss-cross the country, while the stunning coastline offers amazing sea kayaking. Glacier walking, helicopter flights and whale watching are also possible.

In just one day we've gone from fast and flowy to eyeball-poppingly technical riding

and we're buzzing. We're also starving, and it's an hour's drive to the next, and final, trail of the day.

Iceland isn't renowned for its cuisine – fermented shark's meat and puffin seem to be the national dishes. Happily, those with weaker stomachs are also catered for. Iceland's unofficial national dish is the venerable hot dog. Stalls litter Reykjavik and every convenience store seems to have a hot dog station. Wrapped in bacon, piled high with fresh and deep-fried onion and slathered in ketchup, they're a great pick-me-up on the drive, backed up with a thick Skyr yoghurt, Iceland's other foodie obsession.

Bloody tourists

The way Magne describes it, the final trail sounds like something straight out of *The Lord of the Rings* – a narrow sliver of singletrack clinging to the side of an ever-widening grassy valley that's a complete contrast to the morning's landscapes. Steep at the top, it drops down to some classic Icelandic geothermal activity, with steam venting from the ground, before tracking alongside a hot stream to the trail's end.

Throughout the day our guide has lamented the growth of tourism in Iceland. A double-edged sword, it's brought more people and money to the country – including more mountain bikers looking for guiding – but it's also meant the sanitisation of roads and trails to cater for those less willing, or able, to experience the wilderness.

This, unfortunately, is the case at our final trail. In the two weeks since Magne last rode it the singletrack has been bulldozed into a wide access path, while boardwalks and changing blocks have been built next to the hot stream. A constant flow of tourists hikes up the hill, looking warily at the two bikers dodging between them. Magne's crestfallen expression says it all. Fortunately, in the next valleys over he knows of yet more prime singletrack untouched by the influx of tourists.

In just one day we've been shown a massive variety of riding. From fast and flowy to eyeball-poppingly technical, Iceland seemingly has it all. It's not a massive bike park though, so you've got to work for your rewards. Trail density is relatively low, so having a guide is a massive boon. But for those with a sense of adventure – and a quid or two in their pockets – Iceland is a destination that'll push you to your limits.




[CAN'T] FIT A LIFETIME INTO A DAY.
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REFUEL IN LYNN VALLEY
BEGIN MT. FROMME ASCENT 1185M
CONQUER CYPRESS 900M
DESCEND UNDISCLOSED LOAM TRAIL
ARRIVE IN HORSESHOE BAY - SEA LEVEL
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RUFF RIDERS

Want a fun, ever-ready riding buddy who never lets you down? That's why your next mountain bike upgrade should be a trail dog

Words and pics Chris Davison



We've all been there, lying half-conscious in bed on a dark winter's morning with the sound of the wind driving the rain against the window. Without even looking at it, you know the buzz emanating from your phone means your riding buddy is bailing on you with some lame excuse – the baby was up all night being sick, their rear hub's mysteriously imploded – hoping that by sending the text early they'll avoid a reply. It's all too common scenarios like this that may explain a growing trend in the mountain bike scene – the rise of the trail dog.

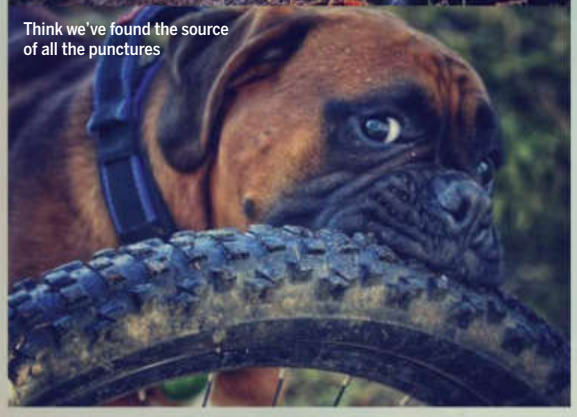
When you look at it for what it is, it's nothing new. Man and dog have bonded and formed a mutually beneficial partnership all the way back to the Stone Age. The only difference these days is that we're hunting adrenaline kicks rather than woolly mammoths. »



Why wear a camera yourself when you can strap it to your dog?



Trail hounds come in all shapes and sizes



Think we've found the source of all the punctures

Canine companions

Gemma Ingall and Oli Force live in south Devon and regularly hit the trails with their four-legged friends. Gemma has ridden with her terrier Jack for nine years, while Oli rides with Eddie, a one-year-old boxer. Both riders found that their dogs instinctively ran alongside them.

"Jack had run next to me on a quad bike in my previous job and knew to keep out of the way," says Gemma. "I'd already taught him not to chase livestock, which is really important because sheep tend to run at the sight of a bike." Oli adds: "I've needed to do very little training. All my dogs have been very loyal and loved to run, though I do work on their obedience and recall to ensure that I have control in case we're close to roads or encounter other, less well behaved dogs."

The benefits of riding with their dogs is plain to see from the smiles on their faces. "He's my best mate and I get to do my favourite hobby with him whenever I can," says Oli. "It's also a great way to wear your dog out if you need a bit of peace – especially useful with a very energetic and bouncy boxer like Eddie!"

Sometimes the dogs' enthusiasm can get the better of them though. "Out on the moor on a freezing day I'd just finished fixing a rear pinch flat," Gemma says. "Having been stopped a while, Jack barked as I picked my bike up and bit my front tyre a little too enthusiastically – shhhhhhhh, another puncture! I was none too thrilled with him." This eagerness to run exhibits itself in the same way with Eddie as he barks and bites Oli's front tyre, trying to encourage him to get a move-on.

A dog's life

As with their human counterparts, trail dogs are prone to the odd accident, as Gemma found out last October in Gisburn. "I was riding along a straight piece of singletrack with Jack running beside my bike as he usually does, when he started to yelp. I don't know how it happened, but his tail had gone through one of the holes in the brake rotor – it was badly cut and essentially »

"He's my best mate and I get to do my favourite hobby with him whenever I can"



CARE & MAINTENANCE

THREE TIPS FOR A HAPPY TRAIL DOG

1 Unlike us, dogs don't sweat, so to cool themselves down and control their body temperature they pant. They can overheat quickly, so be sure to take water and snacks for your dog as well as yourself.

2 Just as some trails can wreck bike tyres, they can also cause damage to your dog's paws. Younger dogs will have softer paws so be mindful and check for scrapes and cuts. If there is an injury allow proper time for it to heal.

3 Be aware of how your dog is acting and respect the fact that, like us, they can have off days. If you follow these simple rules it'll lead to a stronger bond and many years of riding with the most faithful riding partner you could wish for.



Angus is a perfect fit for Rachel – even her shoes!

ONE GIRL AND HER DOG

ANGUS AND RACHEL ARE A WINNING PARTNERSHIP

Rachel Atherton is well known for her success on the race track, but such success only comes with huge amounts of training. Rachel's secret weapon is her much-loved trail dog, Angus.

"Angus is a three-and-a-half-year-old shorthaired German pointer. I wanted a breed that had lots of energy and stamina, was intelligent and also loved to cuddle in the evenings. He's sooo affectionate! He loves riding all day then sneaking on the sofa or lying by the fire while we cook dinner. I wanted a dog that would love to ride with me and needed me to get out and take him for a ride – training motivation!

"I've ridden with Angus since he was six months. To start with we just went slow around the flat woods so he could learn to stay near me – he didn't want to be left behind! I accidentally rode into him a couple of times and he was pretty upset, but actually it's good to do that because now he knows to avoid the wheels. He's quite a nervous dog, so that helps him not get run over. Before we went on long rides I made sure he was good at coming back when I called him.

"I take Angus riding DH with me. He loves the first couple of runs down and sits in the uplift between my legs. Gee pretends he doesn't like having him there, but he ends up on his lap! After a bit Angus gets tired so he stays in the vehicle with the driver, or in my Jeep sleeping, till the last run when he comes with us again. He cheats and cuts corners though! I ride XC with him too. He's good for me because he goes so fast up hills. I hate setting off on a ride without him. It feels really strange and lonely. His line choice is impeccable – he always takes the fastest, most direct route down. He runs so close behind me sometimes that he gets covered in roost.

"He pretty much has one speed, whether it's uphill or downhill, so he's waiting for me at the top of the hills and he cheats on the downhills, but on fast fireroads he sucks. He tries to run fast but it's bad for his joints so I often wait and go slow with him. So if I suck at races it's because I wait for my dog!

"My favourite place to ride with Angus is at home in the Dyfi Forest. He loves the different terrain there – he bombs down the fast straights, his tongue hitting the floor, then we get into the woods and he's like a dog possessed, smelling everything. The soft loam is good for his feet.

"We ride trials motorbikes a lot too. He loves that because we go around the same loop in the woods, so he can just chill and smell and dig, and he knows we're never far away. Sometimes he doesn't feel like running – he just wants everyone to chill in the same place.

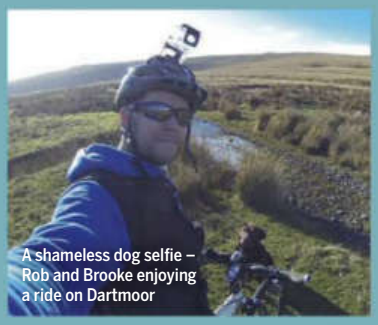
"Having Angus makes me go out riding more – he needs long walks so we ride a lot. But also, he's my best friend. He makes it more fun. I talk to him, he makes me laugh, takes my mind off the hills and reminds me to live in the moment. He reminds me to sleep immediately when tired too! When I first got him I was amazed how much he taught me. He's just happy if he has space to run, water and food at night – that's pretty cool!

"When we go on longer rides, Angus eats bits of my oatcakes. I'm sure he'd like me to take some sausages but I don't like him eating a lot when he runs because it's bad for his tummy. My bro Affy [Dan] shares his sandwiches when they go for their mega six-hour rides but we aren't organised enough to take dog stuff too. He likes to eat soil though!

"I take Angus to the races too. My most memorable race with him was the National Champs at Moelfre a couple of years ago. After practice on race day I lay on the grass with him and slept for a bit. It was so good waking up for my race run and being with him – the first thing a dog makes you do is smile. I won!"



Having your dog with you can give you a different perspective on riding



A shameless dog selfie – Rob and Brooke enjoying a ride on Dartmoor

RIDER'S BEST FRIEND

THE MUTT'S NUTS

Reader Rob Symes sums up what's so good about having a trail dog: "I've been riding for many years now (I'm definitely getting older, I remember when Magura hydraulic rim brakes were the bees' knees!) and I can honestly say one of the best additions to my mountain biking essential equipment list is my dog, Brooke.

"When all other riders wuss out because it's wet and muddy the dog will come with you. When you're not quite up for getting out on a ride, the dog always needs exercise. When you're not feeling like pushing it as hard as you can, the dog is bouncing off the walls with excitement to go as fast as she can." Case made.

broken in two. By the time we got him to the vet's he'd bled through two bandages and nothing could be done for his tail except amputation. Now it's half the length – much more aerodynamic! He was back out running with the bikes a week and a half later as though it had never happened, but it's taken me a lot longer to forget."

Partner in grime

So what makes a good trail dog? Over the centuries man has bred various different breeds to do an assortment of specific jobs, and it's these working dogs that tend to make the best canine mountain biking companions. A trail dog needs a mix of speed and endurance, and breeds that are used for hunting and herding are high in energy and endurance and used to running all day. They also tend to be easier to train than non-working dogs.

Trail dogs come in all shapes and sizes, so to help you choose the right breed you need to ask yourself what kind of rider you are. Do you like to pin it down the hills, or prefer all-day cross-country epics? After all, the best riding partner, whether human or canine, is one that enjoys the same types of trails and rides that you do.

The bottom line is that it's all about enjoyment. "Every ride has a funny story," says Oli. "Eddie is such a character – he runs into trees, falls through bushes and regularly does a 'Vicar of Dibley' in puddles." With performances like that, riding with a trail dog is always going to put a smile on your face – and that's what we're all chasing out on the trails.

GOOD TRAIL DOG BREEDS

SPEED, STAMINA AND INTELLIGENCE ARE ESSENTIAL IN A TRAIL HOUND, SO SOME BREEDS ARE BETTER THAN OTHERS



GUNDOGS

Gundog breeds such as Labradors and golden retrievers are bred to have high energy in short bursts, making them suited to riders who like shorter, more intense rides. Springer and cocker spaniels often have boundless energy and will run for miles.



POINTERS

Pointing dogs are a type of gundog with an instinct to stop and look in the direction of the game, hence the name. Pointers are a breed built to run so they're ideal for riders who like long, all-day epics. They're also extremely fast and agile.



HUNTING DOGS

Hunting dogs were bred to run alongside riders on horses so have excellent speed and stamina. Wolfhounds, boxers and ridgebacks will happily run all day. Terriers and Jack Russells will run fast for five to 10 miles, so are ideal for DH pinners.



HERDERS

Breeds such as border collies and German shepherds were bred to work all day on a variety of terrain. They're extremely high-energy dogs and won't want to wait around for slower riders. These breeds are also highly intelligent and very obedient.



SLED DOGS

Siberian huskies and Alaskan malamutes are renowned for their endurance and are capable of running great distances. Their heavy, thick coats mean they can overheat easily if run too hard so they need to take regular 'cool down' stops.



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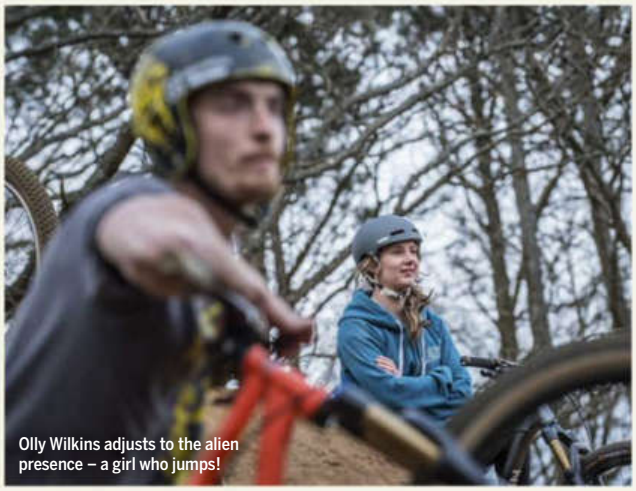
SKY'S THE LIMIT

She earned her stripes in DH, but Manon Carpenter can mix it up with the boys at the dirt jumps too

Words Olly Wilkins **Pics** Roo Fowler



Growing up, I've spent the majority of my time at the dirt jumps, and it couldn't be a more male environment. You dig with the lads and argue over where to build stuff. You cut down trees together and lug them through the forest. You cook stuff on the fire – badly – and then you ride. Even the riding is a very male experience. Everyone gets charged up on testosterone and the session begins. You holler and whoop as people stomp their tricks. It turns into a bit of a feeding frenzy, like monkeys at the zoo – one starts smashing the cage and running around and the rest follow, all desperately trying to outdo each other. Whichever way you look at it, the whole shebang reeks of unwashed pads, rotten leaves, dirt and BOYS.



Olly Wilkins adjusts to the alien presence – a girl who jumps!





I was deep within my male bubble, up at the S4P Bike Park in Surrey, when I got the text. It was from Manon Carpenter, saying she wanted to ride some dirt jumps. Not what you'd expect from the 2014 women's DH World Cup champ and world champion. Actually, it's not a text I'd expect from any girl. The only women you see down the trails are concerned mums, dog-walking grannies or female paramedics. It probably explains my lack of skill with the opposite sex – it's amazing I haven't ended up with an elderly, dog-owning paramedic as a girlfriend!

Anyway, I guess Manon isn't just any girl. She's an elite level athlete who gets paid to hurtle down the harshest terrain at warp speed. Despite this, there was still an element of doubt in the sexist-caveman part of my mind. How would she get on?

Star-struck

I got to the woods bright and early the next day, because I wanted to get the trails in good condition for when she arrived. The dirt at S4P is really sandy – perfect for winter, but it gets a little dusty come summer. I did what I could to patch up the holes using water from a puddle. I have a similar reaction when told a woman will be visiting my house – I start scuttling around trying to tidy the place up.

Manon turned up with her entourage, a spectrum of Welsh talent that included everyone from skate park riders to downhillers, as well as arguably Manon's biggest influence – and a legend in the bike game – her dad, Jason. With the niceties done with, we started to ride.

The first thing I noticed was the atmosphere change up at the trails. The usually loudmouth locals were more reserved and keen to impress this new and exotic visitor. That or they were a little star-struck. Either way, it really highlighted how few girls we have riding up at the trails, even on the beginner lines. It also made me think how Manon, Rachel Atherton, Tahnée Seagrave and the rest of the women's downhill field play an important role in



Manon whips her way down the line – and shows her dad how it's done

THE LOWDOWN

S4P BIKE PARK

Just south of London in leafy Surrey, Brendan Fairclough, Sam Reynolds, Olly Wilkins and the S4P crew have built their dream playground. The S4P Bike Park is the perfect place to hone your skills and work your way up to larger jumps. Visit **www.facebook.com/s4pbikepark** for info and **www.b1ke.com** for a free day pass.



Manon's not just clearing the jumps but throwing in some style too



Olly's set to impress, at home in the bike park he helped to build

getting more girls into the sport we all enjoy.

Dad vs daughter

The bike park is laid out in a very beginner-friendly format, so it's easy to understand where to go first. At the far left there's a roller line so you can learn to pump. Each line grows in size and difficulty until you find yourself on the pro line at the far right of the field. We began riding the rollers and tables to warm up, but it was clear that Manon was no newbie. Her dad has a track building business and spends a lot of time crafting pump and BMX tracks around the country, and I guess someone has to test them!

It also became apparent that Jason wasn't here to watch. At 47 he's probably the oldest rider we've had at the trails, but the challenges from dad to daughter were coming thick and fast. They soon moved on to the main line – the intermediate sized jumps, around 5ft tall and 10ft long. Manon got a few sets in and stopped after overshooting a particularly dusty jump. Jason, undeterred by his daughter's rainbow stripes, hit the same line and nailed it first try. The spot erupted and Manon returned to the top to match her dad's run.

Next up was the pro line, where you'll often find Sam Reynolds putting together runs for his next contest. Although the jumps aren't much longer than the main line (10-12ft) »

We began riding the rollers and tables to warm up, but it was clear Manon was no newbie

they are much taller and steeper, which results in a lot more time in the air. They begin with a tiny roll-in straight into a steep, techy step-down. It's known as a squirrel catcher and is designed to put people off if they aren't ready for the larger jumps on the more difficult lines. As soon as you land the squirrel catcher you're straight into your run and pretty committed – it's no easy task to pull out because the bombholes have no flat spots and the jumps are spaced pretty close together.

Ladies first

My preconceptions about girls riding our jumps had already been smashed to pieces. The only question was, who would make it through first? After walking the line it was clear the squirrel catcher was putting both Carpenters off. Jason played the father figure and rolled in first to test the water. He bailed, throwing his ancient DMR through his legs quicker than a man half his age. "It's fine, Manon," he shouted up.

Manon dropped in and sailed the set, along with the next two jumps to go with it. After a bit of to and fro the winner was announced – Manon had taken the overall and cleaned the big line within only a few attempts. Jason made it through and joined us throwing whips on the last step-up. We ended the day lapping the jumps – every day's a training day, after all!

Inspirational stuff

Watching Manon ride you can really see the years of experience she has on a bike, and it's clear there's a crossover from her time spent on a DH rig. Thanks to riding on the World Cup circuit she has a certain calmness on a set of jumps – she can relax and assess what's going on. Calculated and smooth, Manon rode all the lines better than the majority of the local guys.

Hopefully with the female talent we now have here in the UK, the next generation have some clear inspiration, and it won't be long before girls riding jumps will be a much more familiar sight. That's got to be good news for everyone – especially us boys.



You want jumps? Get yourself down to the S4P Bike Park



Manon and dad Jason eye up the Jammie Dodgers





Whatever size jump he's hitting, Olly oozes style

JUMP TO IT

WHY DIRT JUMPING IS GOOD TRAINING FOR DH

"Obviously being able to jump bikes comfortably is useful for racing DH," says Manon. "We have some big senders on race tracks and a lot of time can be gained if you can clear them smoothly. Being able to pump and skim over roots and rocks, taking off and landing in the right place, helps massively as well. It's also good to practise pushing yourself out of comfort zones. You turn up to some jumps and think, 'Uh oh, these look big'. But you know if you wimp out you'll still be wishing a week later that you'd had a go! It's a bit like on a race track – sometimes there'll be a section that terrifies you. You'll stand with your bike about to drop in, heart flat out, sweaty palms, telling yourself it'll be easy, you know you can do it. It's a scary place to be, but I always remind myself how good it'll feel when I've done it."



SAFETY COMES STANDARD

THE AMBUSH IS THE LIGHTEST AND MOST VENTILATED, EXTENDED COVERAGE HELMET FOR TRAIL AND ALL-MOUNTAIN RIDERS.

10 THINGS TO TRY IN 2015

8

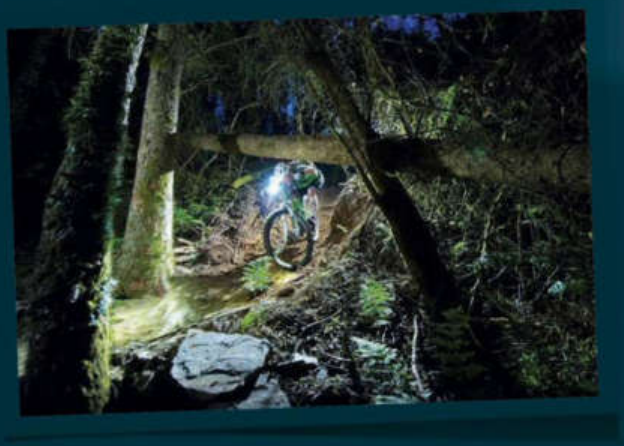
GO FOR A NIGHT RIDE



Strap some lights on and saddle up for the best night's craic you may ever have

WHY BOTHER?

Night riders – we've all seen them on dark nights, cycling past with mouths open, mud-splattered and seemingly in touch with some inner mountain biking joy us daywalkers can only imagine. There's more to night riding than you might think, and as the nights continue to draw in and the last of the after-work power hour trail sessions has been abandoned, it's an excellent way to keep your riding reflexes sharp until, erm... next May. Not to mention, great fun in its own right.



DANCING IN THE DARK

Turn the lights off in your house and run as quickly as humanly possible upstairs to the bathroom. Tricky, wasn't it?! The sad truth of night riding is that you'll probably only ever ride at – at best – half the speed you're capable of during the day. But that's not such a bad thing, because it could well save you from stacking it, plus it'll feel just as fast, if not even faster. Trails you know like the back of your hand will become tunnel-like rollercoasters of doom in the dark. Remember, you can get into trouble quickly, so take it slowly.

THE ESSENTIALS

What do you need to ride at night? Here are some illuminating essentials...



Lights

You should be looking to acquire a front light, a helmet-mounted unit and a rear light to let others know where you are **– turn to page 130 for our pick of this year's lights.**



Layers

We could all go out in fleece-lined boiler suits, but that isn't the secret to keeping warm – layers are, as every good mountain biker knows. See opposite for more on this.



Glasses

Don't ride with glasses during daylight hours? Get some for night riding. Why? Well, in daylight, you're unlikely to ride through dog muck at 15mph. Enough said.



Mates

Night riding is a laugh so it's good value with your friends. But more than that, it's safer with mates too. And pubs – warm pubs – are open at night too... It'd be rude not to.



Mudguards

Even the smallest MarshGuard style muck blockers will drastically cut the chances of you ingesting filth or having it shot-blasted into your retinas.

YOU LIGHT UP MY LIFE



The world of lights is a confusing one. Here are the basics...

1 Lumens The more lumens, the brighter the light. But they're not everything. Mega lumen counts can mean a short run time at full power so a more moderate figure – around 1,000 lumens – often offers a better compromise of run time and power output.

2 Form factor Off-road light sets used to consist of separate head units and battery packs connected by cables, but advances in technology mean all-in-one units that place the LEDs and battery in the same neat housing are increasing in popularity.

3 Batteries Lithium-ion batteries have revolutionised the bike light, offering more power and reliability in a smaller, lighter package than the old lead acid and NiMH options. They do need to be discharged and looked after slightly differently to prolong their life, so read the instructions. Consider purchasing a spare battery to have charged and ready in your pack.

4 Helmet light You often turn the handlebar one way but look the other way when riding. A good helmet light helps eliminate some of the problems inherent in doing this in the dark. Make sure the supplied mounts will work with your lid though.

LAYERS FOR THE SCARED

Proper layering makes night rides a lot more comfy. Here's how to hit your layering sweet spot...



BASELAYER AND BIB TIGHTS

A good quality baselayer will wick sweat away from your skin, helping to keep you warm. Three-quarter-length bib tights are cosy and stop those big, earthy splashes of water disappearing down the back of your shorts.



JERSEY AND JACKET

A mid-weight trail jersey with rear pockets will provide storage and comfort on dry nights, while a good softshell or waterproof jacket will keep the elements at bay and can easily be ditched in the event of overheating.



GILET

These French-sounding sleeveless marvels do an amazing job of keeping your torso warm and/or dry, and are another quick and easy layer that can be jettisoned into your pack, should steam start to come out of your ears.



A CHANGE OF APPROACH

You and your mates may ride the steepest, most technical monsters hewn from the local hillside every Saturday morning, but this won't work for night riding. Instead plan a longer loop with more mellow trails. It'll amaze you how fast they'll feel and you'll reap the fitness benefits too.

YOU LIGHT UP MY LIFE (PART 2)

Proper trail lamps require a proper investment, but at this time of year some of the most important lights you'll invest in are the cheapest. It's essential to have a set of commuter lights in your pack, charged and ready. A front and rear pair of LED wonders will make sure you're safe and visible on the ride home should you get carried away on full-beam on the trails. USB charging will mean they're easy to keep topped up at work too.



STAY SAFE OUT THERE!



Night riding has more potential for peril than daytime spins so make sure someone knows where you're going and when you should be back. Check your phone is fully charged and safe in a waterproof pouch. GPS tracking apps are often free to download and can help people track you down. Even in the pub...

NEXT ISSUE
Stay in shape over winter
ON SALE 16 OCTOBER

Rider: Geoff Gulevich | Photo: Paris Gore | Location: Nelson, British Columbia

INTRODUCING THE **MAIDEN**



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P110 BIKE TEST

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- Vitus Escarpe VRS

PLUS



102 SIX OF THE BEST
Comfy grips reviewed



104 MBUK MACHINES
The latest on our rides



130 GROUP TEST
Fifteen front lights rated

MBUK Ratings

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02 We have unrivalled knowledge and experience

03 We spend a vast amount of time and money making sure we get it right

04 We care more about telling you the truth than anyone else anywhere!

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HOW WE TEST

Detailed product check in the *MBUK* workshop

Strip and rebuild, checking for potential problems and improvements

Hit the trails... hard!

Test in real riding conditions till we know everything there is to know about the product

Re-test product with another tester

OUR TEST TEAM

Our Technical Editor in Chief, Rob Weaver, gets new products in as soon as they're available and coordinates all the testing through our vastly experienced band of reviewers. Our main bike tester, Guy Kesteven, has ridden nearly 3,000 bikes over the past 26 years.

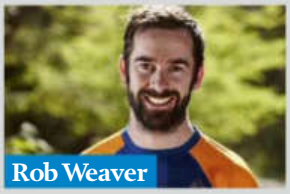
OUR TESTS ARE

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MBUK WRECKED & RATED

Brand New Kit

MBUK Test Team



Rob Weaver

With two decades of riding and racing experience, Rob knows what works and what doesn't



Guy Kesteven

Our ultra-experienced northern test engine is the ultimate exposer of kit that doesn't measure up



Alex Evans

Our new Features Editor is back in the UK after seven years in the Alps and has a reputation for wrecking bikes



Seb Stott

Seb's passion for engineering helps him pick products apart, and he's no slouch on the race track either



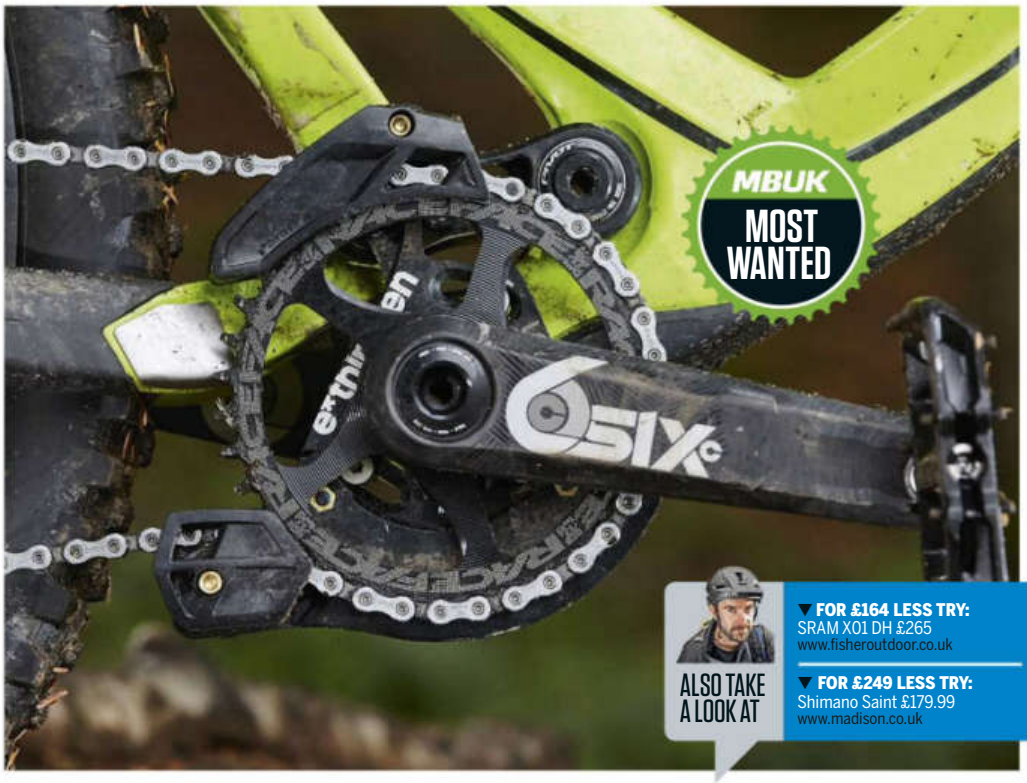
James Blackwell

Short and fast, pinned or binned, Art Editor Jimmer has been testing kit longer than he'll happily admit to



Jake Ireland

Jake spends every day riding, and his injury list proves he's pushing the limits to provide the very best testing



Race Face SIXC Cinch crankset

£429 (including direct-mount ring) **Silverfish** www.silverfish-uk.com

AFTER CLOCKING THE price you may be in need of a sit-down, but that money gets you a seriously stiff crankset that's light on the scales and not afraid of some rough treatment.

Our sample cranks weighed just 520g (175mm arms, with 32t direct-mount chainring fitted). The low weight is mainly down to the hollow carbon arms – unlike most others, they don't have an internal aluminium spine.

Race Face's Cinch system is another key feature, adding versatility. It lets you switch between a variety of different chainring sizes/configurations, as well as being compatible with different bottom brackets thanks to the interchangeable 30mm alloy spindle.

We bolted our cranks to a downhill test rig and were seriously impressed with the surefooted stiffness straight from the off. Power transfer feels efficient and direct when you jab at the pedals, and rock solid when loading the bike on heavy landings. After a couple of rides we did have to tweak the threaded preload adjuster to remove play from the system but that was it. The SIXCs have shrugged off multiple knocks, scrapes and dings with ease, without their performance ever being affected. **ROB**

MBUK

Although pricey, the SIXC Cinch cranks are rock solid, lightweight and can really take a beating

X-Tools Workshop Bike Mat

£8.99 **Hotlines** www.hotlines-uk.com

IF YOU'RE THE type to bring your bike indoors covered in mud, this workshop mat from X-Tools does a good job of containing the damage. Lay it out on the floor while storing or working on the bike and the waterproof material keeps your carpet clean. It also folds away into its own bag so you can take any fallen mud outside easily. It works well for protecting the boot of your car too. It's a touch short for the longest modern mountain bikes though – we're waiting for X-Tools to bring out a Forward Geometry version. **SEB**

MBUK



Specialized Command Post IRcc

£250 **Specialized** www.specialized.com

SPECIALIZED'S DROPPER SEATPOST has been around for a while, but the IRcc (Internally Routed, cruise control) version is new for 2015. While the Command Post of old had just three defined drop positions, the IRcc has an extra 10 indents within its 75, 100 or 125mm of travel.

It's still easiest to drop the post into one of the three main positions, but once you get the knack you can get it into the in-between positions too, most easily on the way down. Selecting one of the smaller indents on the return leg takes a bit more practice and commitment, and requires you to control the saddle with your thighs. The extra positions make it easier to get the right saddle height, though we found that occasionally the post would miss an indent and fall to the next main position with a clunk.

One of the main features of the Command Post is that you can adjust the return speed by connecting a pump to the Schrader valve just below the saddle and adding or removing air. The working pressure range of 15-20psi is low, as is the air volume, so getting an accurate measurement from a shock or tyre pump can be challenging. The post comes out of the box pumped up to 20psi, and we found a quick release of pressure was all that was needed to slow it down a touch. If you're expecting a RockShox Reverb-like gentle return rate you'll need to change your expectations – it varies from very quick to 'well, I didn't want kids anyway'. You've been warned. That said, once you're used to it, the quick-fire return and the defined clunk when it's back up make a lot of sense when you hit an unexpected climb round the corner.

Specialized ship the post with two levers – a standard vertically actuated lever and a SRL (Single Ring Lever) designed to replace the left-hand shifter on bikes with single-ring transmissions. These are both well made and ergonomic, with plenty of leverage. The SRL is our preferred option if you have the bar space.

Installation of the IRcc was fairly easy, though having to set the cable tension at the bottom of the post rather than the lever is a bit of a pain. You have to cut the free end of the cable very close to the set screw in order to stop it interfering with the base of the post during fitting. **TOM**

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Reliable, versatile, smooth-operating post with two great levers. Just watch the return speed!

★★★★☆

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Brand New Kit

PRODUCT NEWS



Less square

German bike giants Cube have been busy for 2016. Not only do they have a load of new shoes and tweaked bikes, they've also fully reworked their downhill rig, the Two15. This 215mm (8.5in) travel beast gets a whole new suspension layout, similar to that used on the Fritzz and Stereo. It sticks with an aluminium frame but upgrades to 650b wheels. The top-end HPA SL 27.5 model comes with Fox's top-of-the-line 40 Float air fork and new DHX2 coil shock. Head to **www.cube.eu** for the full lowdown.

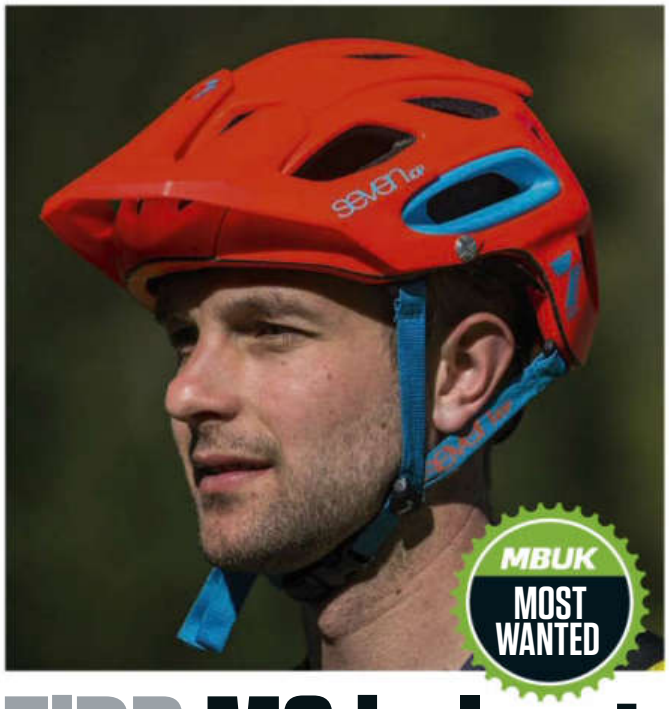


Bargain basement

Want to try a narrow/wide chainring but can't stomach the cost? SRAM have announced they'll be offering chain-retaining X-SYNC rings for just £15.99. How's this possible? Well, these particular rings are made from steel and only available in a few sizes (direct-mount 28t, 30t and 32t on a 94BCD). You'll need to use them with a SRAM 11-speed chain if you don't want to void your warranty. Find out more at **www.sram.com.**

Spice things up

Lapierre have unveiled the latest iteration of their highly acclaimed Spicy all-mountain/enduro bike, which features a number of updates and significant changes. Rear wheel travel gets bumped to 165mm (6.5mm) and the suspension curve has been refined with a new pivot position. Seat tubes have been shortened (the medium frame loses 10mm over the 2015 model) while reach has been lengthened (the medium gains 16mm). There's also improved tyre clearance and room for a bottle cage. Head to **www.hotlines-uk.com** to see the full range. »



7iDP M2 helmet

£59.99 **Decade Europe** www.decade-europe.com

THE GUYS AT 7iDP certainly aren't afraid of eye-catching/garish colours. Their bright orange M2 helmet (it's available in more subtle hues too) boasts 19 vents and an easy-to-use indexed adjuster dial to get the cradle fitting just right. But best of all, it costs just under £60. The lid's looks certainly divided opinion in the office, but that's no bad thing.

Helmet fit is subjective. We found the M2 snug, but did need to crank up the cradle quite a bit to eliminate unwanted forward movement. In use, it took a matter of minutes for that tighter than normal fit to be forgotten. Thanks to the 19 vents, airflow and cooling felt on par with other 'trail' lids like the Bell Super 2, Giro Feature and Scott Stego.

Coverage is good, with a dropped rear to help keep your bonce intact if you do have a big one. We walked away from our only crash during testing pretty much unscathed, though we did manage to break the M2's peak. **ALEX**

MBUK ★★★★☆



Flare Rider Co Stage jersey

£50 **Flare Clothing**
www.flareclothingco.com

THE SMOOTH TO the touch, almost silky polyester fabric used in this enduro jersey from Flare's men's division feels really comfortable next to the skin. On warmer days things don't get too clammy and if you do start to overheat it wicks reasonably well too. The fit is spot on, with enough length in the arms and body without things being too billowy. We're also fans of the cuffs, which aren't overly tight but will stay up should you wish to roll your sleeves up. There's a discrete zipped pocket with room to stash a lift pass or keys in too. Not everyone was into the big, bold graphics though. **ROB**

MBUK ★★★½☆

Unior Suspension Service Kit

£349.99 **Unior Tools** www.uniortools.com

THIS KIT ISN'T cheap, but the included tools are of the utmost quality – as we've come to expect from Unior – and almost everything you could ever need for servicing both forks and shocks is included in the case. In fact, we've only once had to dig into our main toolbox to get the job done, and that was for a 13mm socket. You may only need to use tools such as the seal presses every now and then, but there's no substitute when you do need them. Even imperial Allen keys are provided to help with certain Fox dampers. **JAKE**

MBUK ★★★★☆





fi'zi:k Gobi M3 K:ium saddle

£109.99 **Extra UK** www.extrauk.co.uk

IN ADDITION TO plenty of testing on familiar UK trails, we spent three days in Spain riding bikes fitted with Gobi saddles. Comparing notes with other journalists, it became clear that we weren't alone in finding the perch uncomfortable. After two days of riding, we actually asked if we could swap saddles for the third.

So why did we find it so uncomfortable? While saddle comfort will always be subjective and depend on body shape and riding position, we found that the Gobi's convex hull and lack of a relief channel (also known as a 'love groove') caused pressure on the prostate and the nerves that lead to the family jewels. Not good. The high tail of the saddle is also prone to getting in the way on descents.

At least the slim, flexible sides reduce chafing on the thighs and the hollow K:ium rails keep it fairly light at 207g. **SEB**

MBUK ★★☆☆☆

SRAM RISE 60 29in wheels

£1,592 **Fisher Outdoor Leisure**
www.fisheroutdoor.co.uk

THESE LIGHTWEIGHT CARBON hoops are designed for serious cross-country racers and gentler trail riders. Tipping our scales at 1,457g, they certainly tick the lightness box. They're stouter than many XC wheels too, and almost as stiff as some aluminium trail hoops. The rims are made from unidirectional carbon fibre, layered so as to add strength where it's needed most. The spoke bed is offset to even up the spoke angle and increase stiffness further. This means a single spoke length is used throughout the wheelset, making replacement easier.

We measured the inner rim width to be closer to 20mm than the claimed 21mm. This means larger tyres (2.2in+) roll around on the rim with little encouragement unless you up the air pressure, reducing traction. Stiffness is fairly impressive for such lightweight hoops, but when pushed hard – harder than you'd dare push most XC wheels – we did manage to buzz the rear tyre on the chainstays. Low weight combined with rapid (6.9-degree) engagement boosts acceleration. **SEB**

MBUK
Slightly narrow, but with impressive stiffness for their weight they're a worthwhile upgrade for lighter riders
★★★☆☆





ALSO TAKE A LOOK AT

▲ **FOR £208 MORE TRY:**
Reynolds BLACKLABEL 29 XC £1,799.99 www.upgradebikes.co.uk

▼ **FOR £692 LESS TRY:**
Roval Control 29 Carbon £900 www.specialized.com

MBUK

WRECKED & RATED

Brand New Kit

PRODUCT NEWS Continued



Turned out nice

If you've got a spare £2,695 (for the frame only) and are partial to a bit of trail riding or enduro racing, you may want to check out the new, rather lovely looking Turner RFX. It boasts 160mm (6.3in) of DW-Link suspension, a carbon frame, adjustable head angle, 650b wheels and Enduro Max sealed bearings, along with a host of other enduro must-haves. If you're keen, head over to **www.silverfish-uk.com** to check up on availability.



New post drops

Race Face have jumped into the demanding world of dropper seatposts with the Turbine, which has an internally-routed hybrid mechanism and offers up 100, 125 or 150mm of drop. It weighs a claimed 495g and comes in four lengths and two diameters (30.9mm/31.6mm). If you're really keen, there's even a shifter-paddle lever upgrade option, with six colours to pick from. Pricing is at the higher end of the market at £349. The guys at **www.silverfish-uk.com** have all the details.

Gripping stuff

We all love a good lock-on grip, don't we? The godfathers of the lock-on, ODI, have released a new line of single-collar Elite Series grips. There are three models to choose from – Motion, Flow and Pro – and the offset design means more padding can be placed where it's needed without the grip feeling overly bulky. There are three colour options and each set of grips will set you back a reasonable £22.99. Have a ganders at them over at **www.ison-distribution.com.**



ALSO TAKE A LOOK AT

▲ **FOR £35 MORE TRY:**
Hope Tech Enduro Pro 2 EVO £385 www.hopetech.com

▼ **FOR £155 LESS TRY:**
Superstar Tech 4 DS25 £184.99 www.superstarcomponents.com

DMR Zone 650b wheels

£349.98 **Upgrade Bikes** www.upgradebikes.co.uk

WE REVIEWED EARLY samples of DMR's Zones in our last wheel test, but after a disappointing big dent incident we agreed to go in-depth and long-term to see how a fresh set of hoops held up.

The important news is that after a full summer of hammer and more than their fair share of rock and big drop abuse, the Zones are still round. There are no big flat spots or jug spouts in the rims either, despite several high-speed pinch punctures and the inevitable flat tyre battering before you can stop. These incidents caused one sharp burr on the rim that we had to file down and a couple of aesthetic gouges but that's certainly not a deal breaker.

The hubs are still smooth, and the relatively small 12-degree pick-up lag and middling weight keep them responsive under power. The 24mm inner rim width gives noticeable extra support and stability to tyres without cutting rolling speed too. The pre-taped rims seal easily, though they don't come with valves and it's taken us a while to find aftermarket valves that give a consistent, reliable airtight seal (we recommend the Schwalbe ones). **GUY**

MBUK

Affordable aggro wheels that are well on their way to regaining the toughness rep they need

Wolf Tooth single ring kit

MBUK MOST WANTED

£147 (chainring, expander cog, 16t sprocket and Goat Link) **Leveret Productions** www.leveret.cc

WOLF TOOTH'S FULL set is the best performing single-ring upgrade we've used. The 'Drop-Stop' chainring is quiet and smooth under power, and the anodised teeth are holding up well. It comes in a vast range of options (£49-£78).

The expander cog (£70) is available in SRAM or Shimano synced designs, and if you've got a SRAM or Shimano XTR/XT cassette there's a 16t sprocket (£16) that replaces the 15t and 17t sprockets for a smoother ratio range. Finally, if you're running a Shimano rear mech, you can help it cope with the bigger cassette by fitting a longer 'angle of dangle' B-screw bolt (£2) or extended 'Goat Link' gear hanger (£16).

The result is impressively smooth and consistent shifting right across the range, with no big gaps in revs and no need to carefully nurse the chain into the crawler cog, and we soon forgot we weren't running a full-factory 1x transmission. **GUY**

MBUK





ALSO TAKE A LOOK AT

▲ **FOR £200 MORE TRY:**
Bell Full 9 £349.99
www.zyro.co.uk

▼ **FOR £80 LESS TRY:**
7iDP M1 £69.99
www.decade-europe.com

Specialized Dissident Comp full-face helmet

£150 **Specialized** www.specialized.com

THE CHEAPER COMP version of Specialized's Dissident DH lid may not have all the bells and whistles of its carbon fibre counterpart, but the essentials are still present and correct, it looks great and costs half as much. The same safety standards are met too, and like the carbon model, the Comp will accept the EJECT safety system.

Tipping the scales at 1,020g, the Dissident Comp is one of the lighter full-face lids out there – something you'll appreciate if you wearing it for long enduro stages. Internal channelling, four forward-facing vents across the top of the head (along with ports on the brow) and seven exhaust ports help a little with cooling but things still get pretty sweaty on warmer days. The mesh vent at the front of the chin guard isn't fixed as tightly in place as it should be and needs popping back into place on occasion too.

When it comes to the all-important fit, our medium sample felt relatively snug but very comfortable. It didn't hug our heads quite as securely as the carbon Dissident though, leaving us cranking up the double D-ring closure to eliminate movement. All the goggles we tried with the Dissident Comp fitted without issue and when we wore it with a Leatt neck brace, movement remained free and unrestricted. **ROB**

MBUK

Stylish full-face lid at a decent price. Doesn't fit quite as snugly as the carbon version so try before buying

★★★☆☆

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MTB BITS AND PIECES



SENSUS/35BIKES FRONT MUDGUARD

£8.99 **Hookit Products**
www.hookitproducts.co.uk

With some wild patterns (and more sedate options) to choose from, this fender looks good and does a decent job of keeping crud off your face. The zipties need to be cranked up tight to prevent movement due to the use of slots rather than holes. **OLLY**

MBUK ★★★½☆



NUKEPROOF BRAKE PADS

£10 **Hotlines** www.hotlines-uk.com

Nukeproof's brake pads are available in three compounds for most common stoppers. We tested the SRAM Guide organic pads, which give plenty of power and bite without any nasty noise. We didn't get the chance to abuse them on long alpine runs, but they seem as good as SRAM's own. **JAKE**

MBUK ★★★½☆



BRAND-X PLASTIC BOTTLE CAGE

£7 **Hotlines** www.hotlines-uk.com

This simple wrap-around cage kept our bottle in place even when hammering rough, jump infested trails, with zero movement or rattle. Getting the bottle in and out is easy too. Simple, effective and dead cheap. **ROB**

MBUK ★★★★½



Odlo Molina Gore-Tex jacket

£205 **Odlo** www.odlo.com

THE MOLINA JACKET is all about simplicity. It's a lightweight waterproof made from phenomenal three-layer Gore-Tex Active fabric, with clean lines and a quality construction. The short, stiff collar sits nicely below your helmet and the zip garage stops any chafing under the chin. The dropped rear protects your bum from spray and is adjustable via a tiny elasticated drawcord. We love the soft, form fitting rubber cuffs, which ensure that rain and mud stay out. Every seam is taped to maximise its water resistance too.

Although the body of the jacket is well tailored there's an excess of material in the shoulder and upper arm areas, which causes a bit of ballooning. The fabric is amazing though, breathing well but keeping the elements shut out. **JIMMER**

MBUK ★★★½☆



Essax Adrenaline XC saddle

£109.99 **nrg⁴ Cycling**
www.nrg4cycling.co.uk

THE ADRENALINE XC is a more conventional saddle than Essax's radical finned Shark and at just 161g with titanium rails it's potentially a great weight saver. It uses an 'Anti Fatigue Net Matrix', which their website doesn't really describe but does attribute an "independently tested" 4.7 percent increase in pedalling efficiency to. It's certainly firm for a super-light saddle, and its subtle curve and grippy suede effect cover keep you well centred for grinding a big gear to put the rest of the pack in the pain cave. The price is acceptable for the category, and Kevlar scuff protection on the corners adds longevity. **GUY**

MBUK ★★★☆☆

7iDP Transition knee pads

MBUK MOST WANTED



£59.99 **Decade Europe** www.decade-europe.com

THE TRANSITION KNEE pads offer lightweight protection in a well fitted, pedalling friendly package. The malleable knee cup hugs the contours of your knee well and provides a decent amount of coverage, stretching down to cover your upper shin. There's enough protection for most trail riding crashes but you'll need something bulkier if you're into downhill.

The strapless fit is snug but remains comfortable even on long, pedalling-heavy rides, and we never once had any issues with the pads slipping out of place, even on rough trails, thanks in part to the thick silicone strips around the top and bottom openings. When it gets warm, the stretchy sleeve has mesh panels that help to release heat and go some way to preventing a meltdown.

The thin profile of the pads means they can be stowed in your pack without taking up too much valuable room. Add to that the reasonable price tag and they start to look pretty appealing. **ROB**

MBUK ★★★★½



ODI Ruffian Soft Lock-On grips

£21.99 **Ison Distribution** www.ison-distribution.com

ODI'S RUFFIAN GRIP is a proven performer and a favourite of many gravity riders. The tried and tested lock-on design remained solid and play-free throughout testing, and the burly end caps stayed in place despite our fair share of offs.

The new 'Soft' rubber compound is nice and grippy in the wet, and seems to dampen high-frequency trail buzz too. There's no waffling or ribs to isolate the hands from vibration, but the rubber itself does a good job of staving off hand pain, and the simple design gives a direct feel on the bar. The downside of the softer rubber is that they'll wear out faster, but after a lot of hard use, our grips are still looking fresh.

The broad lockrings stop you placing your hands right at the ends of the bar, as some riders like to, but if you don't mind this, they're a very comfortable set of grips. **SEB**

MBUK ★★★★☆

CamelBak Palos 4 LR hydration bumbag

£69.99 **Zyro** www.zyro.co.uk

RIDING WITHOUT A pack is all the rage, but you still need to carry some essentials, and that's where the Palos bumbag comes in. It's got a 4l capacity and comes with CamelBak's 1.5l lumbar reservoir – one of our favourites, thanks to its fast-flowing mouthpiece and easy-to-fill quarter-turn cap. The hose wraps around the waist strap and connects to the pack via a magnetic 'Tube Trap', making disconnecting it to drink an absolute doddle.

The storage is cleverly organised too. Popping the clip on the front of the Palos and opening two flaps reveals a series of mesh stash pockets. There are two main zipped pockets too, plus one zipped and one elasticated pocket on the waist strap. Fill the reservoir up and pack the essentials in, and, as far as bumbags go, the Palos works well. Chuck your weight around and it does shift slightly (though CamelBak assure us this will be less of an issue with the production bag, which will have more flexible padding), requiring you to cinch the waist strap up pretty tight. Riding without the reservoir in place underlined the comfort and general stability, but you'll need to be able to fit a bottle to your bike to do this. **ROB**

MBUK

One of the comfiest bumbags we've tried, with a great reservoir, but you need to cinch that waist strap up tight

★★★★☆



ALSO TAKE A LOOK AT

▼ **FOR £25 LESS TRY:**
Osprey Talon 6 Lumbar £45
www.ospreyeurope.com

▼ **FOR £40 LESS TRY:**
Salomon XR Sensibelt £30
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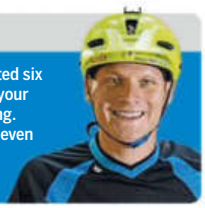
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ESI Racer's Edge

Evolution Imports www.evolutionimports.co.uk

SO GOOD... ESI grips are often seen fitted to weight weenie XC bikes but they're good for other types of riding too. They're well priced and the special foam compound removes almost all trail buzz. Fitting isn't too difficult, but you'll need some hairspray to help coax them on. If the 30mm diameter is too thin for you, ESI offer thicker grips too, for slightly more cash.
NO GOOD... Despite its vibration-removing qualities, the foam feels pretty hard when you squeeze it and gives your hands a beating over really rough sections of trail. We lost an end cap from our relatively thin-walled handlebar too.

MBUK ★★★☆☆



£21.99

Lizard Skins DSP

2pure www.2pure.co.uk

SO GOOD... These grips are relatively chunky because they're made up of an inner foam layer and an outer wrap of sticky-feeling DSP material. Unusually, you fit them to the bar using double-sided tape. The procedure is easy and everything you need is included, and they haven't shifted and spun in the wet so there's method behind the madness. Grip in the dry is good with or without gloves, and they filter out most trail vibration, giving a good amount of comfort.
NO GOOD... We found the DSP material relatively slippery in the wet, with or without gloves. We'd rather see integrated bar end caps than push-in plugs too.

MBUK ★★★½☆



£19.95

Race Face Half Nelson

Silverfish www.silverfish-uk.com

SO GOOD... The Half Nelsons have been high on our favourites list for a while thanks to their super-thin profile and single inboard locking clamp, which uses a torque-friendly 3mm bolt. Despite the hard-feeling compound they remove a good proportion of trail vibration. Even bigger hits are surprisingly well absorbed, with the limit in comfort only being reached on long DH runs. In dry conditions there's plenty of grip. We prefer them without gloves.
NO GOOD... The Half Nelsons get slippery in the wet when wearing gloves, and at £20, the fact they have push-in bar end caps is a bit of a disappointment.

MBUK ★★★½☆



£9.99

Gusset Silicone Slim

Ison Distribution www.ison-distribution.com

SO GOOD... At less than a tenner the Silicone Slims sure are a bargain, and it's been a bit of a surprise how good they are for the price. The silicone compound doesn't get slippery in the wet, and despite their super-thin profile they manage to give a huge amount of comfort and remove loads of trail buzz. We haven't had any instances of the grips rotating on the bar in the wet either, and fitting is a doddle too.
NO GOOD... We've got a feeling that these 'Slim' grips will be too thin for most riders. The good news is that Gusset offer a double-thickness 34mm diameter set for the same price.

MBUK ★★★★☆



£17.99

Superstar Silicone Lockon

Superstar www.superstarcomponents.com

SO GOOD... We haven't seen silicone lock-ons before, and the added security of the twin locking collars will make a lot of riders happy. There's plenty of 'squish' and despite their chunky outer diameter and our preference for thin grips we got on with them well. They remove trail vibration and provide big-hit comfort too. The lock-on collars use 3mm Allen bolts, and the outer clamps double up as bar end caps.
NO GOOD... The wide outer diameter may not suit those who like super-slim grips and the bar end caps can be fiddly to fit correctly.

MBUK VALUE

MBUK ★★★★☆



£21.99

Renthal Lock-On Super Comfort

Ison Distribution www.ison-distribution.com

SO GOOD... Renthal's Super Comfort compound does exactly what it says on the tin. The super-soft, Blu-Tack like rubber eliminates vibration while giving the equivalent comfort level of donning your favourite jumper. These grips remain comfy through big hits and long sections of gnarly trail, and the built-in bar end caps and chunky lock-on collars add durability.
NO GOOD... The 2.5mm Allen bolts for the lock-on collars are easily rounded. Super Comfort comes at a price – these wear noticeably quicker than all the other grips here.

MBUK WINNER

MBUK ★★★★½

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WARNING: Bicycling is a dangerous sport which may result in serious injury or even death. For proper use of your helmet, please refer to the owner's manual.



With some tweaks, the Mount Vision was a perfect companion for the 'Ard Rock Enduro

JIMMER'S MARIN MOUNT VISION C-XM8

£3,500 **Paligap** www.paligap.cc



I'd been looking forward to racing the 'Ard Rock Enduro all year, so it was in true Jimmer fashion that we left with my Marin nowhere race ready and emitting some annoying creaks that I just couldn't pin down. The culprit, I think, was an overzealous jet wash. I removed the BB for a clean – that wasn't the problem. Then I removed and regreased the shock mount bearings – bloody tricky, but still the incessant creaking persisted. Oh well, nowt I could do now.

The 'Ard Rock was my first enduro and I felt a little undergunned. In a sea of long-travel bling bikes I must have had the most ghetto-looking bike out there, and only 140mm of travel too. Guy had promised me a burlier wheel/tyre combo to handle the demanding Yorkshire terrain. What I ended up with was a well used Bontrager Rhythm wheel and Michelin Wild Grip'R tyre up front, and a tougher Novatec Diablo wheel and WTB Riddler tyre out back.

After Saturday's practice I was stoked – what a great day's riding! I'd acclimatised to the dust and rocks, and R2 felt well bedded in. Better still, the creaking had disappeared and the slight anxiety I'd been feeling about my new tyres was gone. They were fantastic. The Riddler gave me fast tracking speed and the confidence-inspiring Wild Grip'R up front saw me through a weekend's hard riding almost puncture free (that's another story...), so cheers, Guy!

The twin-ring set-up that I usually moan about (a bit) on the Marin was a godsend for what seemed like the never-ending climbing involved over the weekend. It wasn't until the dust had settled and the adrenaline had drained out of me that I realised how bloody good the bike had felt. The 140mm Fox 34 fork and CTD shock were amazing, and worked better being pushed to the limit then ever before. The gnarly terrain was easily eaten up and I never felt out of my depth on the Mount Vision. In fact, I'd say it was the perfect machine for the day – 45km of climbing and descending on some of Yorkshire's finest trails never felt so good.

SPEC DECK

MICHELIN WILD GRIP'R ADVANCED GUM-X 27.5X2.35IN FRONT TYRE **£39.99** bike.michelin.co.uk

WTB RIDDLER TCS TOUGH (FAST ROLLING) 27.5X2.4IN REAR TYRE **£60** www.hotlines-uk.com

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The Strive should be the perfect test bed for the 160mm DVO Diamond fork

ROB'S CANYON STRIVE CF 9.0 RACE

£3,746.98 **Canyon** www.canyon.com



Last month I mentioned that I was really having to give the Strive's ShapeShifter system some welly to switch between the two riding modes. It turns out that the air pressure had dropped since first pumping it up. A quick top-up and things are back to normal again, which is great – especially with the mile munching I've been doing.

The focus this past month has been on the DVO Diamond fork I've fitted up front. It comes with plenty of adjustments to keep fettlers happy, including an 'Off The Top' system. This lets you adjust the negative spring using a 5mm Allen key (after releasing the air pressure) to tailor the feel of the first 70mm of travel. It really seems to work too.

The Diamond has taken some time to bed in but things are feeling better now. After a little more twiddling, the plan is to back-to-back test the DVO with the new RockShox Lyrik that's just landed with us to get a good measure of both forks. It should prove to be an interesting day, and of course we'll keep you posted with how we get on.

Aside from the fork, the rest of the bike is unchanged and continues to impress on each and every ride. Even after some seriously out of shape manoeuvres on our local rock-riddled downhill runs, the Canyon's wheels are still spinning straight and true, which is always a bonus.

JCW'S INTENSE CARBINE 29 EXPERT

£5,299 **Extra UK** www.extrauk.co.uk



The Carbine's a hugely capable machine and there's not much I want to change, but at 13.89kg (30.62lb) without pedals it is a little on the portly side, even if it doesn't feel heavy when in the saddle. The first step in the diet plan was a tubeless conversion, which was made incredibly simple by the pre-taped Stan's rims and tubeless-ready Maxxis rubber. A dollop of Stan's fluid and a quick effort with a track pump and bang, bang, bang, each tyre seated and sealed perfectly, first time. If only going tubeless was always this easy! »



The Carbine's lost some weight and said goodbye to pinch flats too



The Dales aren't classic fatbike terrain, but Matt didn't regret going full enduro on the ICT

MATT'S SURLY ICE CREAM TRUCK OPS

£2,199.99 **Ison Distribution** www.ison-distribution.com

Having to remove sand from awkward places is a familiar story after a day at the coast and returning from the Croyde Beach Breaker race was no different. With a trip to Yorkshire for the 'Ard Rock Enduro imminent, I decided to do a complete strip, clean and regrease to get rid of the crunching.

This month called for a tougher build so the RockShox Bluto suspension fork made a welcome return. Halo's wallet-friendly Tundra wheelset got its first outing, paired with fast-rolling Maxxis Mammoth tyres, whose EXO sidewalls proved tough enough to survive even the Dales' rocks. The lack of a QR compatible hub meant dusting off the original SLX drivetrain. Not wanting to trust quick gear selection to the stock microSHIFT thumbshifters, I opted for a race day compromise – an old Shimano Deore 10-speed rear shifter paired with the original two-speed friction thumbie. Despite looking odd this combo worked perfectly, allowing fast shifting up and down the cassette and the occasional drop into the inner ring for the lengthy transition climbs. Finally, a new set of sintered pads and a compression-less cable set gave the Avid BB7 brakes the added stopping power needed.

The result was a surprisingly capable bike with plenty of grip and stability through the finer shale sections and a tank-like reply to rocks and rubble. Having never ridden this terrain before, the ICT certainly helped boost confidence. The transitions were a slog though, especially with tyres at 9psi. It wasn't quick and it certainly wasn't pretty, but neither am I! The most important thing is that it was hilarious fun, and I wouldn't have done it on any other bike.



GUY'S WHYTE T-130 SX

£1,999 **Whyte Bikes** http://whyte.bike



The switch to Marzocchi's new 320 LCR fork has been a big boost to smoothness and control. While the lighter chassis means it's not as stiff as the Suntour Aion that came off the T-130, the added traction means I can attack corners harder. The frame is still rock solid, though having ridden the 2016 versions, their extra reach and slacker angles have made my 2015 bike feel decidedly compact. The carbon frame I got a glimpse of has really got me excited.



ROB'S PIVOT PHOENIX

£2,700 (F/O) **Upgrade Bikes** www.upgradebikes.co.uk



After a day on the Fox Float X2 air shock, I can see why the likes of Bernard Kerr keep it bolted to their bikes for World Cup duties. It's not quite as supple as the DHX2 coil shock in the car park, but up on the hill it's a different story. The composure and control on offer elevated the Phoenix to the next level, even when hammering through chunder that previously had my feet chattering across the pedals. I rarely get all gushy about a product, but that shock... ooft!



JAKE'S SARACEN MYST PRO

£2,999.99 **Madison** www.madison.co.uk



With another month away spannering at World Cups, you'd think the Saracen would've had it easy, but I've managed to get a fair amount of digging and riding in when I haven't been out of the country. It's taken tons of abuse, but I think I'm finally tiring the frame out a bit – though I'm sure a strip and grease-up will stop the creaks and groans. The fork seals have started weeping too, so that's another job on the list. I'd best get back in the garage!

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Alex has been really impressed by the Sanction, both in the Alps and on flatter trails back home

ALEX'S GT SANCTION PRO

£1,499 (frame and shock) **GT Bicycles** www.gtbicycles.com



The Sanction is a burly bike, with 165mm (6.5in) of travel, a 66-degree head angle and long 1,215mm wheelbase. You'd think that hucking credentials like this would come with a weight penalty, but somehow my build has come in at a cool 13.1kg (28.9lb) with pedals. Easton Haven wheels, a carbon Nukeproof bar and super-light Fabric Scoop saddle all help keep the weight down. I'm also lucky enough to be running the new SRAM GX groupset, which not only looks slick but works brilliantly too.

I've just come back from a week in Méribel spent riding everything from bike park runs to untouched singletrack, and the Sanction really felt in its element – the long-travel frame takes the bumps like a champ, and feels particularly composed under braking. It doesn't hang around on the climbs either thanks to its low weight, clawing its way up the hills like a bike with a lot less travel – damn impressive stuff.

Back in the UK I've been riding XC loops on it after work (maybe you've seen the selfies on the *MBUK* Facebook page?) and it doesn't feel out of place on flatter terrain. Day to day it's proving to be reliable, though it wasn't without its teething issues. The Independent Drivetrain suspension system's main and secondary pivots run on bushings, and after a few rides they were creaking badly. On closer inspection it became clear that I just needed to tighten the bushings to the correct torque setting using the tool supplied with the frame, and I've not had any further issues since.

The SRAM GX chainring and mech combo have done a great job – I'm yet to drop the chain while riding, and this is without any kind of chain retention system. Up front the RockShox Pike fork is doing exactly what you'd expect it to do – delivering super-plush and really well controlled travel. I've added two of RockShox's Bottomless Token volume spacers to make the stroke more progressive, and while in the Alps I increased the air spring pressure to 100psi. I'll drop it back down to 80psi for the UK, where the hits aren't as harsh. I haven't got any upgrades planned for the bike – I'm just going to keep riding it and enjoying getting used to the very special build.

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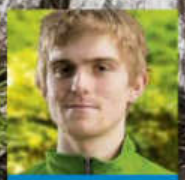
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BUY-DIRECT TRAIL BIKES

Words Seb Stott **Pics** Steve Behr



THE TESTER

Seb Stott

MBUK's Technical Writer has a racing background and a physics degree, allowing him to push bikes to their limit on the trail and pick apart their engineering credentials too.

More and more of us are buying direct these days, and it's easy to see why. By cutting out the middlemen (bike shops and distributors), manufacturers can deliver astonishing specs for relatively little money. In the past, flashy parts sometimes disguised sub-par frames, but times are changing. The remaining downside of buy-direct bikes is that you can't examine one at your local bike shop or take it for a test ride, so it's vital to get the inside track. To that end, we've lined up a range of buy-direct steeds and tested them on everything from steep technical climbs to flowy singletrack and flat out DH tracks to find out how they perform in the real world. Is it really worth taking the leap and buying online? »

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VITUS ESCARPE VRS

£1,999.99 *Surprisingly capable and fun trail steed, but sizing is odd*

SO GOOD

- Superb suspension performance for the price
- Solid Shimano stop/go equipment
- Dropper post is a blessing at this price

NO GOOD

- Cramped front end hinders both climbing and descending
- Puncture-prone tyres
- Short-travel dropper limits steep descending

JARGON BUSTER

Dropper post travel
Most adjustable seatposts drop the saddle 125mm out of the way for descending, but the Vitus's KS post only moves 100mm.

Bed-in period
Time taken by some forks to work through their initial stickiness.

As the in-house brand of internet giants Chain Reaction Cycles, Vitus are well placed to deliver good value bikes to the masses. The Escarpe is their 650b wheeled, 135mm (5.3in) travel trail offering, which shares much of its make-up with the longer-travel Sommet enduro bike. It's well equipped for the price, but does that translate into real-world performance?

The frame

Vitus's V-Link suspension system looks like a regular four-bar design, complete with Horst Link style chainstay pivots. But the lower shock mount is actually on the swingarm, not the frame, creating a 'floating shock' set-up. This layout is designed to provide a supple suspension action that's soft at the beginning of the stroke and ramps up slightly towards the end to resist bottoming out.

The Escarpe's hydroformed aluminium chassis won't win any prizes for exceptional stiffness, but the high-direct front mech mount and ISCG-05 tabs allow for simple drivetrain swaps down the line, and bottle cage mounts are always handy too. Vitus claim the XL Escarpe will suit riders from 6ft 3in to 6ft 7in, but our 6ft 3in tester needed the seatpost raised to the minimum insertion limit. The reach is on the shorter side too, so we'd recommend double-checking the fit if you're thinking of buying.

The kit

A Marzocchi 350 CR fork and simple RockShox Monarch RT shock are on damping duty, while Shimano SLX brakes and an SLX/XT 2x10 drivetrain deal with stopping and shifting in their usual flawless manner. A dropper post is a bonus on a sub-£2k bike, but the KS eTen on the Escarpe only has 100mm (3.9in) of travel, which is a little limiting on steep descents and an odd choice for an XL bike. With an internal width of 23mm, the WTB rims keep the tyres reasonably well supported and can be run tubeless if you add rim tape. The WTB Vigilante and Trail Boss tyres roll fast and grip well in loose conditions, but the hard compound and thin casing mean you'll want to replace them if you ride on rocks on a regular basis.

The ride

Once we'd slid the saddle forward on its rails to compensate for the layback seatpost and moved our body weight further over the centre of the bike, the Vitus became a well-mannered climber. The rear suspension is reasonably efficient in the big ring, and the shock can be locked out or firmed up for pedalling. In the granny ring, bob is kept in check by chain tension, so you can leave the shock open for max traction on technical ascents.

High weight (14.66kg/32.32lb) means the Escarpe isn't the fastest climber, but the wide-range gearing will get you there. The fast-rolling Trail Boss rear tyre keeps speed nice and high on the flat, while the Vigilante up front tears up traction from soft and muddy ground. The slippier rear rubber is also a lark when sliding sideways round the bends. Skinny sidewalls meant we punctured though, and the hard compound renders both tyres slippery on wet rocks.

Point the Vitus downhill and its suspension performance comes to the fore. The 150mm (5.9in) travel fork felt notchy out of the box but soon bedded in to deliver really supple – if noisy – performance, hoovering up the terrain. The rear end kept pace without feeling undergunned despite its 15mm travel deficit. The frame's suspension



POINT THE VITUS DOWNHILL AND ITS SUSPENSION PERFORMANCE COMES TO THE FORE

kinematics flatter the simple but effective Monarch RT shock, with the rear end achieving full travel on bigger hits but ramping up just enough to avoid bottoming out harshly. Really aggressive riders may find the fork a little too linear and we did notice the shock fading slightly on long downhill runs, but for a bike of this price and calibre these are minor gripes.

The remote-operated dropper post helps keep the rhythm of the ride, but taller riders in particular will find the 100mm drop insufficient for full-bore blasting. We opted to stop and drop it manually for steep and rowdy downhills. The bike could do with a wider handlebar than the 740mm riser fitted too, to make the most of its suspension-fuelled capabilities, but our main gripe is with the fairly short frame reach. Despite a 60mm stem – not so short by modern trail/enduro standards – the cockpit feels a touch cramped on long, steep climbs. The lack of reach is more of a problem on steep and technical descents though, where it makes the front end feel twitchy and nervous under load. This would be less of a problem for a shorter rider than our tester, but they'd struggle with the frame's fairly lofty seat tube. All this makes it harder to be sure of the correct sizing when buying – not ideal when you can't take one for a test ride. »

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SO GOOD

Long reach adds comfort and allows for aggressive cornering despite low-tread tyres

Light weight gives rapid acceleration

Efficient suspension helps with climbing and descending

NO GOOD

Non-dropper post is frustrating

Noodly Reba fork is easily overwhelmed

JARGON BUSTER

Triple butted
Tubing with three different wall thicknesses, delivering extra strength where it's needed while saving weight where it's not.

Reach
Horizontal distance from centre of BB to centre of top of head tube. The most useful fit measurement.

The Meta Trail is down on travel compared to the other bikes here, but the Andorran brand – who, unusually, sell their bikes in UK shops as well as direct from their website – have produced a fun and surprisingly capable trail bike nonetheless. This 'Essential' model sits in the middle of the three-bike range and, in terms of spec for money, is the one to go for. On the trail though it's the playful attitude of the frame, not the equipment, that shines through.

The frame

Commencal have got on board with the long front end philosophy pioneered by Mondraker and this comes across in the ride character of the bike. The frame boasts the longest top tube on test, giving a roomy 483mm reach figure on our XL sample. The broad top tube and hydroformed, triple-butted tubeset boost stiffness, contributing to snappy handling.

A single-pivot swingarm drives a rocker-actuated shock mounted in a recess in the top tube to deliver 120mm (4.7in) of rear travel. This combines a supple action with efficient pedalling response. In order to improve swingarm stiffness there's no room for a front derailleur, but there are ISCG-05 tabs for a chain guide.

The kit

The 1x10 transmission is mainly SRAM X9 kit, with a 42t expander sprocket from e*thirteen and a 34t narrow/wide ring to keep the chain on track up front. RockShox's Monarch RT3 shock does a sterling job, while their Reba RL fork is great on the climbs but lets the side down in the rough. The Formula CR3 brakes offer ample power once bedded in. The bike deserves a wider bar than the stock 730mm offering, and the 60mm stem could be shorter too. Lightweight wheels and tyres keep acceleration snappy and rolling speed high, but the rapid rubber isn't much cop in mud – you have been warned!

The ride

The short-travel Meta plays its trump card well on the climbs. Sprinting out of the saddle with the fork and shock in open mode, bob isn't too bad, and both can be locked out or firmed up at the flick of a switch. Low overall weight (12.86kg/28.35lb) and lightweight wheels make the Meta Trail noticeably more sprightly under acceleration than any other bike here, especially when pounding the pedals out of the saddle. The Maxxis Ikon and Ardent tyres provide very little rolling resistance, so open sections are dealt with swiftly.

When the climbs get steep and technical the shock can be left open for better comfort and traction without excessive wallow or bob. The seat angle is just steep enough for tough ascents, and the spacious cockpit provides plenty of room to breathe. Even with the cassette expander, the 34t chainring requires some muscling round on longer drags though.

Stopping to drop the saddle manually is a tediously nostalgic experience after testing so many bikes with dropper posts. At least the 1x10 set-up means the flow of the ride isn't further disjointed by the need to shift between chainrings, and the relatively efficient suspension helps when pedalling out of the saddle. The mid-range gearing gap created in order to fit the expander sprocket on the freehub is noticeable on flatter sections, but the jump doesn't feel as big as you might expect.

The Commencal is a fun machine on the descents. That long reach makes it surprisingly comfy at speed, and the stiff frame provides snappy »



THAT LONG REACH MAKES IT SURPRISINGLY STABLE AT SPEED, AND THE STIFF FRAME PROVIDES SNAPPY HANDLING IN THE BENDS

handling in the bends. We soon had the tyres dancing around at the limits of traction as we tore into trail centre corners and bike park berms. They may be designed for speed rather than loose conditions grip, but the relatively supple rubber sticks better than most over hard, wet surfaces. The rear suspension performs well too, with the simple shock not being overwhelmed by the 120mm of travel it controls even on prolonged DH runs. It's quite linear, which helps the bike make the most of its available travel on the terrain for which it was intended. Yes, it'll bottom out if confronted with big landings, but that was never going to be the forte of a short-travel trail bike.

The main let-down when descending – apart from the non-dropper post – is the Reba fork. It's not the limited travel that's a problem though, it's the flexy stanchions. They bend and bind noticeably when confronted with square-edge hits or braking bumps, causing the fork to spike and feel harsh. This will be less of an issue for lighter riders, so if you can budget for a dropper and want a fast and lively trail razzer, it could be the Meta for you. »

MBUK

Snappy handling and comfy geometry make for a great fun frame that deserves a better fork and a dropper



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SO GOOD

- Arguably the fastest bike on test
- Pike fork and Cane Creek shock perform brilliantly
- Top-end parts for the price

NO GOOD

- Geometry is conservative
- Noisy 2x10 gearing can be offputting
- Shock has proven unreliable in the past, though we had no issues here

JARGON BUSTER

Sizing up
Choosing a larger frame size than recommended to gain a longer reach. A long seat tube can rule out this option.

Carcass roll
When a tyre flops about on the rim under hard cornering, causing a vague ride feel or sudden lurching sensation.

Canyon were one of the first brands to deliver buy-direct bargains in a big way, and their experience with this business model is apparent. While the 650b wheeled Spectral has become immensely popular, the 29er version has dodged the limelight. We pounded round plenty of familiar trails back-to-back with the other bikes here to see if the wagon-wheeler could make the most of its big-wheeled advantage.

The frame

The Spectral uses a Horst link four-bar design to deliver its 130mm (5.1in) of rear wheel travel in a controlled and pedalling-efficient manner that works well with the Cane Creek shock. The hydroformed frame felt plenty stiff throughout testing, and ISCG-05 tabs allow for a chain guide to be fitted. Canyon's own rear through-axle design keeps weight down but requires fiddling with an Allen key to remove. The frame reach is on the short side, and at 545mm in the XL size, the seat tube is tall, which prevents upsizing.

The kit

The combination of Canyon's huge buying power and direct sales approach ensures the Spectral is decked out with a flashy spec for the price. Highlights include a market-leading RockShox Reverb Stealth dropper, superb Pike RCT3 fork and powerful SRAM Guide RS brakes. The Cane Creek DBInline shock is a top performer once set up properly too, though it has had reliability issues in the past.

DT Swiss's XM 1501 SPLINE wheels are surprisingly stiff, but the 2.4in Continental tyres fitted here are prone to carcass roll when pushed hard. The 2x10 SRAM X0 gearing gives a huge range of ratios, and the integrated chain guide kept our chain on track throughout the test period, though it did rattle when battering over rough ground. The 740mm bar could be wider but the 70mm stem is a necessary evil due to the short reach.

The ride

After setting the shock up based on the recommended settings on Cane Creek's website, we headed out on our main test loop. With the DBInline in open mode the Canyon pedals without much in the way of bob, even when sprinting hard. It's when the trail points skywards that the Spectral's suspension really shines though. The shock's Climb Switch only adds a little low-speed compression – plenty for efficient pedalling on steep drags, but not so much that it affects traction – but it also slows the rebound, which prevents bucking and bouncing when seated over bumps, and is great for edge-of-the-seat uphill struggles. Despite the long stem, the short reach put the handlebar far closer than we'd have liked when climbing. Even so, the stopwatch revealed the Canyon to be the fastest bike here on the technical climb sections of our test course. Big wheels and efficient yet comfy suspension help it up nicely.

The big Continental tyres are a bit draggy on the flat but the large volume eats up rough terrain. Point the Spectral downhill and the rewards keep coming. The 130mm Pike fork is well damped and stiff enough to remain composed over the roughest terrain, despite its limited travel. The rear end keeps up, taming the bumps in an efficient rather than pillowy manner. We bottomed out occasionally, but this is par for the course on a shorter-travel bike on such demanding tracks.

The shortest reach on test (459mm), combined with a long »



IN A STRAIGHT LINE IT DESCENDS VERY RAPIDLY INDEED, ABLE TO PLOUGH OVER ROUGH TERRAIN OR SKIP THROUGH SECTIONS

stem and steep head angle, makes the Spectral feel twitchy in tight turns and meant we felt precariously far forward when cornering really hard. While the DT Swiss wheels aren't too bendy, the large Conti tyres suffer from carcass roll on the narrow 22.5mm (internal) rims, making for a vague cornering feel on trail centre berms. We'd recommend replacing them with some sturdier rubber.

Despite these limitations, the big wheels, chunky tyres and sorted suspension make the Canyon a blast for the most part. In a straight line it descends very rapidly indeed, able to plough over rough terrain or skip through sections. The powerful SRAM Guide RS brakes provide enough torque to stop the big wheels even on the steepest descents, and the supportive suspension feel we fettled from the Cane Creek shock rewarded pedalling and pumping efforts to keep speeds topped up on the flatter sections too. In fact, the Canyon was the fastest bike on test on these less extreme descents.

If you're not too bothered about steep descents and aggressive corner carving, the Spectral is a versatile, fun and swift machine with a properly bling spec at a great price. »

MBUK

The Canyon's bargain spec and generally rapid ride is only let down by the conservative geometry

★★★★☆



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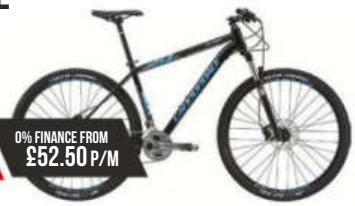
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READER OFFER

Club La Santa LANZAROTE

KICK-START 2016 WITH A MOUNTAIN BIKE RACE IN THE SUN!








With four exciting courses for 2016, the Club La Santa mountain bike stage race will be more challenging and even more technical than ever before.

Taking place on Lanzarote, in the Canary Islands, between 30 January and 2 February 2016, the four events are:

- 38km short-course race
- 55km long-course race
- 21km time trial, with 500m of ascent
- 95km XL race, with more than 10km of the route being climbing

Ninety per cent of the riding will be off-road, on sand, lava fields and dirt tracks in the north of the island. The time trial stage starts from Caleta de Famara and goes up to Las Nieves, with 500m of climbing. The hardest 'XL' race leads the riders from Club La Santa towards Teguise, continuing to the bottom of the mountain close to the dam, then up to the windmills, with more than 10km of climbing.

Club La Santa bills itself as the world's number one sports and activity holiday resort. It's popular with professional riders and is a regular winter training camp venue for top cycling teams.

Stay for at least seven nights and participate in the Club La Santa four-stage mountain bike event to receive 10 per cent off the current online accommodation prices, when you book before the end of October 2015. To qualify for your discount, you need to organise your stay between 22 January and 10 February 2016.

Book online at **www.clublasanta.co.uk** and use the promo code **CLSMB15**

Offer applies to bookings of one-bedroom apartments and one-bedroom suites for at least seven nights | You must stay between **22/01/16 and 10/02/16** | Book before **31/10/15** | Applies to new bookings only | Cannot be combined with any other offer | Subject to availability



BIRD AERIS CUSTOM BUILD

£2,330 *Gravity-savvy customisable steed from British direct-sellers*

SO GOOD

- Custom options mean no need for swaps after buying
- Aggressive geo allows for confident descending
- Supple, adjustable and well balanced suspension

NO GOOD

- Flex in the frame when ridden hard
- Seat angle could be steeper

JARGON BUSTER

DebonAir
Enlarged negative spring chamber on RockShox air shocks that gives a suppler beginning and more supportive mid stroke.

Bottomless Rings
Volume spacers that can be used to adjust bottom-out resistance (positive chamber) and initial suppleness (negative chamber) of DebonAir shocks.

Bird are still a fledgling brand but their buy-direct approach has seen their hardtails fly off the shelves. The Aeris is their debut full-suss, and it's a cracking first attempt. The British brand capitalise on the direct sales model by allowing you to pick and choose the parts you want – everything from the fork to the grips can be swapped to suit your budget or personal taste. This adds to already great value by avoiding those all-too-common swaps. Prices start at £1,595, but we built up a mid-range bike with the aim of striking a great balance of price and performance.

The frame

No spec list can make up for a poor frame, and, on paper at least, the Bird is on point here too. Geometry is modern and aggressive, with a low BB, fairly slack 66-degree head angle and long reach designed around a 35mm stem. The bike uses a Horst Link four-bar rear end, and travel can be adjusted between 140mm (5.5in) and 150mm (5.9in) – it takes just a minute to swap, and the firmer/shorter setting helps a bit with climbing.

The sizing looks odd due to the unusually short seat tube, but this is made up for with a lofty seatpost. The short seat tube means you can upsize if you want an extra-long bike. Front mechs and chain guides are both catered for but there's no room for a bottle cage. It's not our job to tell you what looks pretty and what doesn't, but mechanics will appreciate the faff-free external cable routing. Large and aggressive riders will find the frame a little lacking in stiffness though.

The kit

Our bike was a custom build, with kit picked on a bang-for-buck basis, so it's no surprise the spec list was on point. RockShox's Monarch RT3 DebonAir shock offers a great blend of performance and reliability, and we'd recommend going for the Maxxis Minion front tyre upgrade too. We'd happily downgrade to the Pike RC fork from the flashier RCT3, but we'd consider selling off non-vital organs to hang onto the 1x11 SRAM GX gearing.

The ride

Even in the shorter 140mm travel setting, the Bird is a touch sluggish when pedalling hard or sprinting, but a flick of the shock's pedal-platform lever keeps this under control. We found the seat angle too slack for the steepest climbs, but the kinked tube means shorter riders will experience a slightly steeper effective seat angle. With the shock in the medium pedalling mode, climbing isn't at all bad for a bike of this travel, and the long top tube opens out the lungs to improve comfort on the ascents.

Pointed downhill, the progressive suspension deals with bumps of all kinds very well indeed. It's business as usual with the supple and progressive Pike up front. The rear shock comes with a full complement of Bottomless Ring volume spacers, so there's no need to buy them separately afterwards. After initial testing, we opted to remove the two spacers fitted to the negative chamber. This boosted initial suppleness and (crucially) mid-stroke support too. With five spacers in the positive spring, the front and rear suspension were nicely balanced, remaining supple yet ramping up nicely for bottom-out control. Combined with the long/low/slack geometry, this meant the Bird felt extremely comfortable and planted on the straights.

Initially though, we struggled with front end grip. The Maxxis High Roller



THE ON-TREND GEOMETRY, SORTED SPEC AND SUPPLE SUSPENSION WILL WHISK MOST RIDERS DOWN GNARLY TERRAIN WITH APLOMB

ll front tyre was just too square on the 27mm wide Easton Arc rim, breaking out easily when leaned in hard, so we switched to the rounder Minion in the grippier 3C compound – a £4 upgrade from Bird, which we highly recommend. After playing around with bar height we still struggled to weight the front properly and ride aggressively. Fitting a wider, stiffer bar cured the washy front end, but the extra leverage highlighted some frame flex in the front triangle when ridden hard.

This flex is most apparent when wrestling the bar on stiff climbs or hitting consecutive corners, where it causes the bike to snake lazily through the bends rather than cutting a crisp and precise line. Smaller sizes will likely be stiffer due to the shorter tubes used, and lighter or less hell-for-leather riders will stress the frame less severely too. The on-trend geometry, sorted spec and supple suspension will whisk these riders down gnarly terrain with aplomb, but if you're a big lad who wants to smash into corners as fast as possible, this probably isn't the bike for you. »

MBUK

Slightly vague for aggro types, but sorted spec and stable geometry create a superb ride for most

★★★★☆



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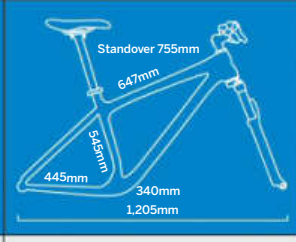
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Bike Test
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THE SPEC DECK



	VITUS ESCARPE VRS	COMMENCAL META TRAIL ESSENTIAL	CANYON SPECTRAL AL 9.9	BIRD AERIS CUSTOM BUILD
PRICE	**£1,999.99**	**€2,899 + €67 shipping (approx £2,110)**	**£2,549 + £47.98 box & shipping**	**£2,300 + £30 shipping**
DISTRIBUTOR	**www.vitusbikes.com**	**www.commencal-store.co.uk**	**www.canyon.com**	**www.birdmtb.com**
WEIGHT	14.66kg (32.32lb)	12.86kg (28.35lb)	13.51kg (29.78lb)	13.67kg (30.14lb)
FRAME	Hydroformed 6061-T6 aluminium, 135mm (5.3in) travel	Triple butted, hydroformed 6066 aluminium, 120mm (4.7in) travel	Hydroformed aluminium, 130mm (5.1in) travel	Aluminium, 140-150mm (5.5-5.9in) travel
SIZES	S,M,L,XL (tested)	S,M,L,XL (tested)	S,M,L,XL (tested)	XS,S,M,L,XL (tested)
FORK	Marzocchi 350 CR, 150mm (5.9in) travel	RockShox Reba RL Solo Air, 120mm (4.7in) travel	RockShox Pike RCT3 Solo Air, 130mm (5.1in) travel	RockShox Pike RCT3 Solo Air, 150mm (5.9in) travel
SHOCK	RockShox Monarch RT	RockShox Monarch RT3	Cane Creek DBInline	RockShox Monarch RT3 DebonAir
HEADSET	FSA Orbit 1.5	Semi-integrated	Cane Creek 40	Cane Creek 40
WHEELS	**Hubs:** Formula **Rims:** WTB i23 (23mm internal) **Spokes:** Stainless **Wheel weight:** 2.23kg F, 2.59kg R (including tyres)	**Hubs:** Alpha **Rims:** Alpha (21mm) **Spokes:** Steel **Wheel weight:** 1.82kg F, 2.19kg R (including tyres)	**Hubs:** DT Swiss **Rims:** DT Swiss XM 1501 SPLINE ONE (22.5mm) **Spokes:** DT Swiss Competition **Wheel weight:** 2.02kg F, 2.3kg R (including tyres)	**Hubs:** Easton Heist **Rims:** Easton ARC (27mm) **Spokes:** Double butted **Wheel weight:** 1.95kg F, 2.31kg R (including tyres)
TYRES	WTB Vigilante 27.5x2.35in F, WTB Trail Boss 27.5x2.35in R	Maxxis Ardent TR 27.5x2.25in F, Maxxis Ikon TR 27.5x2.2in R	Continental Mountain King II Protection 29x2.4in F, Continental X-King Protection 29x2.4in R	Maxxis High Roller II EXO 27.5x2.35in F, Maxxis Ardent EXO 27.5x2.25in R
CRANKSET/ BOTTOM BRACKET	Shimano SLX, 24/38t/ Shimano Hollowtech II	Race Face Evolve, 34t/ Race Face BB92	SRAM X0, 22/36t/ SRAM GXP press-fit	SRAM GX, 32t/ SRAM GXP
DERAILLEURS	Shimano Deore F, Shimano Deore XT M786 Shadow Plus R	SRAM X9 Type 2 R	SRAM X0 (Type 2 R)	SRAM GX R
SHIFTERS	Shimano SLX M670 (2x10)	SRAM X9 (1x10)	SRAM X0 (2x10)	SRAM GX (1x11)
CASSETTE/CHAIN	Shimano HG50, 11-36t/ KMC X10	SRAM PG-1020, 11-36t w/42t e*thirteen EX Cog/KMC X10	SRAM Force, 11-36t/ KMC X10	SRAM GX, 10-42t/ KMC X11
BRAKES	Shimano SLX M675, 180/180mm	Formula CR3, 180/160mm	SRAM Guide RS, 200/180mm	SRAM Guide R, 180/160mm
BAR/STEM/GRIPS	Vitus, 740mm/ Vitus, 60mm/ Vitus lock-on	Alpha, 730mm/ Alpha, 60mm/ Commencal lock-on	Canyon H13, 740mm/ Canyon V12, 70mm/ Ergon GE1	Race Face Turbine, 760mm/ Answer AME, 35mm/ Race Face Half Nelson
SADDLE/ SEATPOST	Vitus/KS eTen	Commencal Meta Trail/alloy	Ergon SME30/ RockShox Reverb Stealth	Charge Spoon/ RockShox Reverb Stealth
DIMENSIONS				
FRAME ANGLES	**Head** 66.5° **Seat** 74.5°	**Head** 67.5° **Seat** 72°	**Head** 68.5° **Seat** 74°	**Head** 66° **Seat** 73.5°
VERDICT	MBUK ★★★☆☆ **Great value hard-riding machine with well-balanced suspension, but it's short and careful sizing is required**	MBUK ★★★½☆ **Snappy handling and comfy geometry make for a fun frame that deserves a better fork and a dropper**	MBUK ★★★★☆ **Bargain spec and generally rapid ride are only let down by the conservative geometry**	MBUK ★★★★☆ **Slightly vague for aggro types, but sorted spec and stable geometry create a superb ride for most**

WHAT OUR SCORES MEAN: We give each bike one overall score to sum up how it performs and its value for money. If a bike gets a score of five, it really is the best you can get in terms of both

★☆☆☆☆ Poor: simply put, don't bother
★★☆☆☆ Below average: flawed in some way
★★★☆☆ Good: it'll do the job and do it well
★★★★☆ Very good: one of the best you can buy
★★★★★ Exceptional: a genuine class leader



MBUK WINNER
BIRD AERIS CUSTOM BUILD

FINAL VERDICT

We've thrashed these four bikes back-to-back on steep, tricky climbs, DH runs and everything in between, even getting the stopwatch out to see how the differences added up. After the dust had settled we went out again with tweaked settings to make sure we had things nailed down. With the bikes chosen according to sales approach, not category, we've ended up with a broader range than usual, but each has been judged for what it is.

The Vitus rides well, but we'd try before buying due to its tall and short sizing. The Commencal capitalises on its shorter travel by remaining swift and sprightly, but it's a couple of upgrades away from greatness. The Canyon boasts astonishing kit for the price and is ultra-fast. If you don't mind the conservative geometry, it's a great option. All three were heavily discounted at the time of writing, which may sway your decision.

But by combining buy-direct pricing with built-to-order specs and modern geometry, it's Bird who've hit the nail on the head. If you're light enough to avoid the flex, it's the Aeris we'd go for.

NEXT MONTH

Boutique hardtail frames

Less bounce, more fun? **On sale 16 October**

MBUK WRECKED & RATED

Group Test

LIGHT UP THE TRAILS

We've tested 15 lights to find the best for hitting the woods after dark

Words Guy Kesteven **Pics** Russell Burton



BATTERY
All the lights here use lithium-ion batteries for maximum efficiency and tolerant recharging. Most still use a separate battery pack and head unit, but self-contained sets are a lot neater and easier to fit to your bike.

SWITCHES
Most lights are turned on/off or moved between modes with a button on the head unit or battery. Remote switches are becoming more common though.

LEDS
All the lights here use LEDs, not filament bulbs, because they're power efficient and also tough. How they're arranged and driven through their circuitry can make a big difference to actual light output.

LENS
By fitting a lens in front of the LED(s) you can control how the light is spread down the trail in terms of focused reach (great for helmet lights) and side-to-side spread (better for bar-mounted lights).

MOUNT
A light is only as good as its ability to stay pointing in the right direction. Mounts don't have to be complicated but they do have to be secure and fit your bar diameter. Helmet lights obviously need a good mount too.

MBUK Ratings

WE BASE OUR SCORES ON VALUE FOR MONEY AND PERFORMANCE

★★★★★ **EXCEPTIONAL:** A genuine class leader

★★★★☆ **VERY GOOD:** One of the best you can buy

★★★☆☆ **GOOD:** It'll do the job and do it well

★★☆☆☆ **BELOW AVERAGE:** Flawed in some way

★☆☆☆☆ **POOR:** Simply put, don't bother!



THE TESTER

Guy Kesteven

Our northern test engine is constantly comparing and evaluating the latest lights against the current benchmarks, taking them to their durability, reliability and weather tolerance limits.

What to look for

They're all bright, but which one is right?

FOR SOME REASON bike lights have always attracted bodgers and bargain hunters more than any other type of component. That means if you choose the right Far Eastern website you can get a simple, powerful-enough light for around US$20. If you're lucky it may last a season or more before the wiring, the head unit or the battery gets loose or gives up. Some overseas companies give decent back-up if you can be bothered to post the light back, but because reliability is less consistent we haven't tested buy-direct lights here. Some of the units we've reviewed are essentially the same though, the main difference being the three-pin plug added by their UK importer. They're more expensive, but you get a UK warranty.

Then there are the 'real' light manufacturers, who design a unique product and sometimes even make it in house. This makes the finished product much more expensive than a rebadged light, but hopefully gets you a smarter design that actually produces the claimed amount of light and run time. Reliability should be better and you'll be able to get spares and repairs for years – sometimes even in the middle of a 24-hour event, when you need it most. This offsets the higher initial cost and makes quality lights a smart investment if you're serious about your night riding.

Wherever you buy your light, 800 lumens on your handlebar is enough for riding confidently on trails you



know OK in daylight. You'll maybe want more power and/or reach for fresh trails, but we rarely run multi-thousand-lumen lights at full chat except on the most mental descents. The glare bounced back can actually be a problem in damp, wooded or foggy/misty conditions. That makes pairing a lower power but more focused helmet light with a mid-power bar light a much more practical set-up. It gives you extra 'see where you're going, not where your stem is pointing' vision and creates better depth/distance perception. It also means you have a back-up light if one of them dies or you need to do trailside repairs/map reading/bag rummaging.

You'll need more battery run time than you think. This gives you insurance if you do have a problem or forgot to charge your light after the last ride. Batteries lose capacity over time too, so the more spare run time you have, the more seasons you'll get out of them. Finally, your light has to fit your bike/helmet, so check the clamp is compatible with your bar diameter and that the battery fits neatly onto your frame. »

HOW WE TESTED THEM

OUR NORTHERN TEST crew rack up thousands of hours of hardcore night riding every year and they've been doing it for decades. That puts them in the perfect position to test lights to their limits in terms of temperature, weather and crash-proofing. It's also ideal for practical assessment of switchgear, programming options, mounts and build quality, because a 'clever' mount isn't any use if it flops as soon as you ride down some steps. We continue testing the lights until they eventually peg out so that we've got a proper depth of data when it comes to reliability. That's how we know which connectors fail first and which mounts stretch over time. As well as riding lights side by side to compare them, we take carefully calibrated beam shots for a clear visual comparison (see them at **www.bikeradar.com**). We also workshop test each light for run time at full power (after several run cycles to get true battery capacity) and record lux output in different modes. This all makes our light tests the most comprehensive, accurate and real-life researched reviews you'll find anywhere.



JARGON BUSTER

> 35mm bar
The latest handlebar diameter standard (most bars are still 31.8mm in diameter where they clamp in the stem).

> Flood
Wide but not very far reaching beam pattern that's great on handlebars for slower speed, twisty, technical riding.

> Halo
The pronounced outer ring in the beam pattern of some lights.

> LED
Light emitting diode. Very efficient solid-state light source.

> Lumen
Standard measurement of amount of visible light. Some brands use verified figures from a measuring sphere, others use a more optimistic theoretical figure.

> Lux
Amount of light projected onto a given area. Useful for testing spot beam power.

> Periphery
The edge of your range of vision.

> mAh
Milliamp hour. Unit of measurement for battery storage capacity.

> O-ring
Stretchy rubber ring used in some light mounts.

> Soft change
Gradual change between a light's power settings to reduce eye strain.

> Spot
Narrow but far-reaching beam pattern that's great for helmet lights and high-speed riding.

> Traffic light
Battery run time indicator that changes colour as the battery's lifespan reduces.



Moon X-Power 2500

£249.99 Raleigh **www.raleigh.co.uk**

MOON'S MOST POWERFUL light has some neat features but the hefty battery is low on run time in the highest power mode. The four LEDs are tightly packed, with overlapping lenses for serious high-definition light saturation in the centre of the beam plus plenty of distance reach too. Peripheral light is relatively weak though, so the X-Power 2500 is best teamed with a helmet light. The four power modes range from a theoretical 2,500 lumens to 500 and can be controlled with a tiny optional remote button. The flat but very long (17cm) hard case battery has an LED strip to display charge level but is heavy and potentially awkward to fit. The hinged thumbwheel bar clamp is impressively secure over rough ground and a helmet mount is also included in the box.

MBUK ★★★☆☆



Gloworm XS V1.0

£239.99 Ison Distribution **www.ison-distribution.com**

THE XS IS a dependable unit with decent features. The ribbed triple-LED head unit sits centrally on the bar thanks to a neat offset mount with a secure metal cam closure. The claimed 2,200-lumen max output is surprisingly dim compared to other lights, but the medium mode is almost as bright and enough for techy riding, and extends the already reasonable battery life considerably. A small cable-linked remote lets you toggle through the customisable output options without taking your hand off the bar, though it's easy to accidentally end up in the multiple strobe mode. The lenses are changeable if you don't like the default light spread and there's an LED fuel gauge inside the compact battery pack for power rationing on truly epic rides.

MBUK ★★★☆☆



CatEye Volt 1600

£189.99 Zyro **www.zyro.co.uk**

CATEYE LIGHTS HAVE always proven reliable, and their most powerful all-in-one Volt now delivers 1,600 lumens. The twin LEDs throw a focused searchlight beam down the trail but give very limited peripheral lighting. The high-contrast beam edge can be distracting too, so this light works best on less technical trails or paired with a helmet light. It has three power settings and you can 'double click' to select max power and bypass the flash mode. Battery life and price are good for its performance and size, and the USB recharging is convenient and fast. The thumbwheel-and-band mount fits all bars, including 35mm, securely and you can slide the light off easily for recharging. There's an optional £9.99 helmet mount but the light is heavy to use on your lid.

MBUK ★★★☆☆



Light & Motion Seca 2000 Enduro 6-cell

£399.99 Madison **www.madison.co.uk**

YOU KNOW A bar light gives great coverage when you don't realise your helmet light has gone out, and that's exactly what happened with the Seca. The lower row of three LEDs has a diffuser lens for super-broad peripheral coverage right down to the tyre, while the top clear-lensed LEDs give impressive reach and rich detail in the centre. Run time is good for the power on offer, but the tall, rubber ended, hard case battery can be hard to fit on the bike. The flash setting is irritating too, and there's no battery indicator apart from an emergency 'low' warning. The rubber hook-and-strap mount keeps it stable on helmet or bar, and diving-quality cable connectors contribute to flawless reliability in several years of using Secas, which makes the high cost a fair investment.

MBUK ★★★½☆

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Image © Trek Bicycle Corporation 2015



Exposure Diablo MK7

£199.95 USE **www.ultimatesportsengineering.com**

EXPOSURE'S LIGHTWEIGHT, MID range, triple-LED light is user friendly and loaded with innovative features. These include a port for adding extra batteries, remote control switches or even a rear light. You can change modes by tapping anywhere on the light and even the tap sensitivity can be tuned. There's a colour coded battery warning light to help you eke out the short life, and engraved run times for different programmable levels. The tightly focused beam works best aimed from a lid, and even then light output was disappointing on the trail for a claimed 1,300-lumen rating. The flanged helmet vent mount is an extremely neat and surprisingly secure piece of design. You also get a simple plastic bar clamp, and can upgrade to a sturdier metal one.

MBUK ★★★½☆



Lupine Piko TL Max

£240 Leveret **www.leveretproductions.com**

LUPINE HAVE BEEN fanatical about lights for a long time and even this mini bar light is a masterpiece. The single-piece design has a long list of programming options etched on the casing so you can set it to run just how you want in terms of power splits or number of levels. Battery life is short but communicated clearly through the main button, so it's easy to ration. The light quality is excellent for a 1,200-lumen lamp too, with the focused but not restrictively narrow beam matching most of the 2,000-lumen units here in terms of on-trail performance. We've had good reliability results from all Piko models over the past few years. The high price reflects the impressive beam though, and that's before you have to buy the (beautifully made) bar mount separately.

MBUK ★★★½☆



Beema AS-2000

£157.99 Bikelights UK **www.bikelightsuk.com**

BEEMA WON OUR value award last year and although the AS-2000's RRP has increased by £10 (though it was on sale at the time of writing) the flash mode is now in an optional menu, which is a welcome change. The unchanged spot and flood LEDs give a theoretical 2,000-lumen output that mixes broad peripheral scope with an OK reach. Front wheel to mid-distance coverage is particularly rich, which is great for tricky trails in treacherous weather. The recessed lenses reduce dazzle if you get out of the saddle on climbs. The O-ring mount and wrapover bag battery are simple to fit, and the generous run times are indicated by colour coding on the main switch. Reliability has been excellent on all Beemas we've used and the head unit and battery come with a two-year warranty.

MBUK ★★★½☆



MTB Batteries Lumen2200

£142.55 MTB Batteries **www.mtbbatteries.co.uk**

THE LUMEN2200 IS unchanged since last year, with neat practical details at a great price. Twin LEDs in a binocular design give decent peripheral scope to keep you aware of current riding context and upcoming corners. It still throws a reasonable column of light down the trail with no obvious hot or dark spots in the beam, which keeps eyes fresher as the night drags on. The four power levels are controlled by a bulky but effective remote switch and there's a battery life traffic light indicator. The generous six-cell battery capacity means run time is unlikely to be an issue for most riders anyway. An anti-slip strap on the wrapover battery bag gives a secure fit and the luminous O-rings for the bar mount are genuinely useful if you drop them in the dark.

MBUK ★★★½☆

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NiteRider Lumina 750

£99.99 2pure **www.2pure.co.uk**

UNFORTUNATELY NITERIDER'S NEW range of big lights wasn't ready in time for our test but the all-in-one Lumina 750 is an impressive budget/lid light. Like many lower-power lights, peripheral coverage is limited, but the rounded beam puts lots of light around the lower edge for detailed debris deciphering. A far-reaching centre beam permits confident high-speed riding, and there's impressive stability from the wrapover rubber strap mount if you pull it tight. A peak over the lens stops upwards glare. While battery life is short, there are three power options and a battery indicator built into the switch. The overheat protector circuit can drop power early on hot nights but it's fine in winter and we've always had great reliability results from NiteRider.

MBUK ★★★½☆



Hope R8

£280 Hope Technology **www.hopetech.com**

HOPE'S UK-MADE flagship light is super-powerful and beautifully constructed. Four spot and four flood LEDs put out 3,000 lumens (2,200 measured). The beam is relatively focused with a fairly sharp edge, and light intensity from front tyre to way down the trail is outstanding. The main switch turns a different colour for each of the six power levels in two separate menus and there's a push-button life indicator on the battery. The head unit twists on and off the metal bar bracket easily but you'll need a strong neck to use the helmet mount. The full-metal battery jacket comes with Hope's signature green rubber bumper caps and gives enough power for full-bore running around most night rides. It weighs an absolute ton though and can be hard to mount securely on some frames.

MBUK ★★★½☆



Gemini Olympia 4-cell

£199.99 i-ride **www.i-ride.co.uk**

THE OLYMPIA IS a user friendly light that offers plenty of power. It packs three LEDs into a compact head on an O-ring mount that fits any size bar. Helmet and head strap (useful for camping/late night race prep) mounts are also included. The bag battery is small enough to fit easily and doesn't slide much despite having no stabilising strap. The 2,100-lumen output gives decent peripheral coverage with clear central detail and reasonable reach. The three power levels are easily tunable and the irritating flash mode is now an option, not a default inclusion. By the time this review is out it'll come with a remote button. There's also a six-cell battery option (£219.99) for truly epic run times. Gemini's long-term reliability reputation is perfect, increasing value even further.

MBUK ★★★★☆



Tumble & Fall Pro 2000

£89.99 NRG4 **www.nrg4cycling.co.uk**

TUMBLE & FALL have solved problems we've had with similar lamps to create an impressively practical light at a bargain price. The lightweight head unit uses an O-ring and hook for a reasonably stable universal bar fit. The cable is securely locknutted into place and the backlit mode/low battery button stands proud for easy gloved operation. The neoprene battery bag with stretchy wrapover strap is more stable than most cloth or hard case cells too. The theoretical 2,000 lumens of light is tightly focused with a peripheral halo, but power is impressive for the price. That makes the flash and totally off 'holes' between the two power modes the only niggle. Bar and helmet mounts and even a head strap in the box plus a two-year UK warranty confirm its total bargain status.

MBUK ★★★★☆

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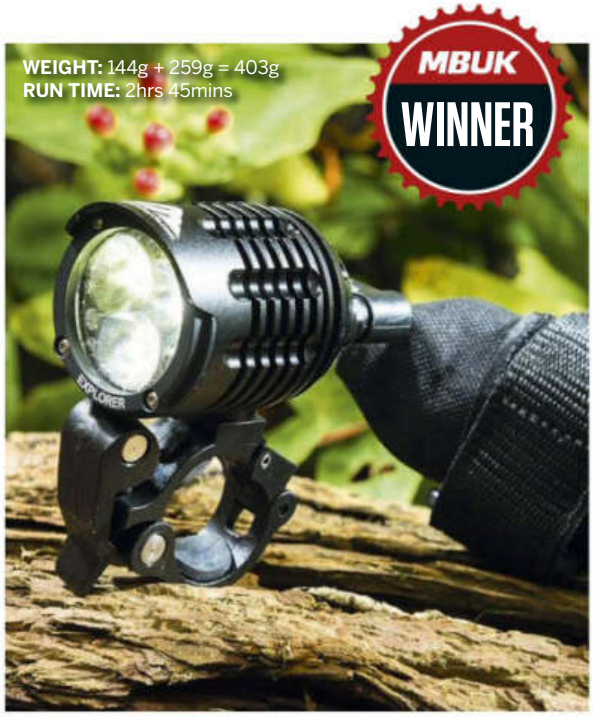
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LUMICYCLE'S EXPLORER HAS always been one of our favourites and for 2016 it gets slight changes to its ribbed and peaked body for better sealing and cooling. The three LEDs giving a 3,500-lumen output are unchanged and it's still the most powerful light on test – something that's obvious in use. The optics have been changed for better peripheral coverage but reach and saturation a long way down the trail are excellent. While it looks old-school, the toggle switch on the back of the light is easy to use even in the thickest gloves or with numb fingers and it lets you go up and down power settings, not just round in a sequence. Full power only comes from a three-minute on, auto off 'Smart Boost' setting that's ideal for most UK descents but means you won't burn the battery flat by accident. Medium power levels are more than ample most of the time anyway. If run time of the small homemade bag battery isn't epic enough, double capacity bag or water bottle batteries are also available. If for some reason 3,500 lumens isn't enough or you're running another Lumicycle as a helmet light, a new remote link feature lets you sync up to six head units and control them from a designated master light. This feature can be added to existing lights and all new and old Lumicycle lights and batteries are cross-compatible so you're totally sorted long-term, and Lumies' UK built back-up is legendarily excellent.

MBUK ★★★★½



Magicshine Eagle M2

£100 Magicshine UK **www.magicshineuk.co.uk**

THIS NEW UNIT from the Far Eastern lighting specialists uses a two-row LED arrangement with three lower floods and three upper spots. The bulky three-button wireless remote looks a bit Early Learning Centre but lets you select either row or both simultaneously. You can also toggle through five different power levels for each mode, all without taking your hands off the bar. With a maximum output of 2,400 lumens it's a seriously bright light when you need it to be, a wide spread/short reach light for climbing or a narrow spread/long reach light for fireroad blasting. The head unit detaches easily from the stable, semi-permanent bar clamp and the hard case battery has twin rubber straps for security plus a Velcro strap to keep the cable tidy. Magicshine reliability has always been good too.

MBUK ★★★★½



Exposure MaXx D Mk8

£344.95 USE **www.ultimatesportsengineering.com**

THIS SELF-CONTAINED design avoids the dangling cable and fit issues of a separate battery. It clicks securely into a bolted metal bar mount and the three spot and single diffused LEDs give a well balanced mix of long-range throw and wider trail context. Remaining run time is shown as a percentage on the rear display and the upper back panel works as the button for seven user-switchable modes. In the three-level Reflex mode, accelerometers detect fast and furious riding and automatically flick the light onto its full 2,600-lumen output. The Smart Port on the rear can connect it to rear lights or remote switches, or be used to recharge USB devices. Exposure's lights are all UK built, recent reliability has been excellent and they attend many events for help when you need it most.

MBUK ★★★★½

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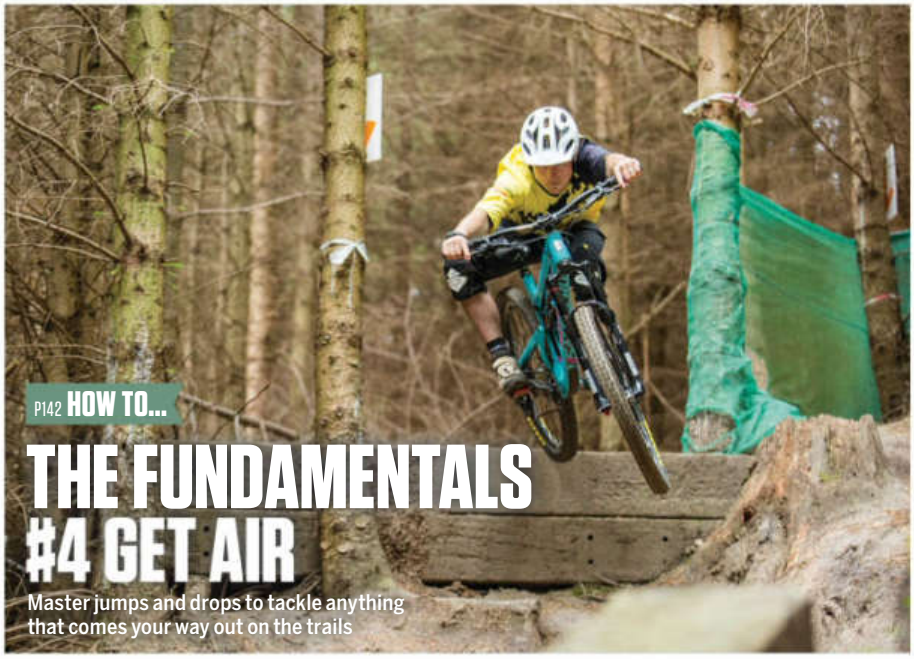
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MBUK Manual

THE SKILLS, KNOWLEDGE & PLACES TO GO FOR A BETTER RIDE



P142 HOW TO...

THE FUNDAMENTALS #4 GET AIR

Master jumps and drops to tackle anything that comes your way out on the trails



P160 WRECKING CREW

HAMSTERLEY FOREST

We check out Descend Bike Park and the miles of XC trails criss-crossing these woods



P150 GRIMETIME

Make sure your bike is ready to hit the trails with these four basic pre-ride safety checks



P152 ASK MBUK

Your questions, our answers, all of your mechanical problems solved



P154 THE BIG RIDE

It may be small but Woodbury Common in Devon has some great singletrack

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All our route maps are put together by route guru **Max Darkins**. Max loves travelling the country in search of the best trails and is also the man behind **www.roughride guide.co.uk**

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the fundamentals

GET AIR

Master jumps and drops and you'll be able to tackle anything that comes your way out on the trails

Getting air is a big part of modern mountain biking. Trail centres and bike parks offer loads of opportunities for airtime, and being able to jump and drop properly is also important if you want to ride natural trails well – you'll be able to pop off roots, clear rock gardens and charge alpine trails, knowing that you can handle just about anything that crosses your path.

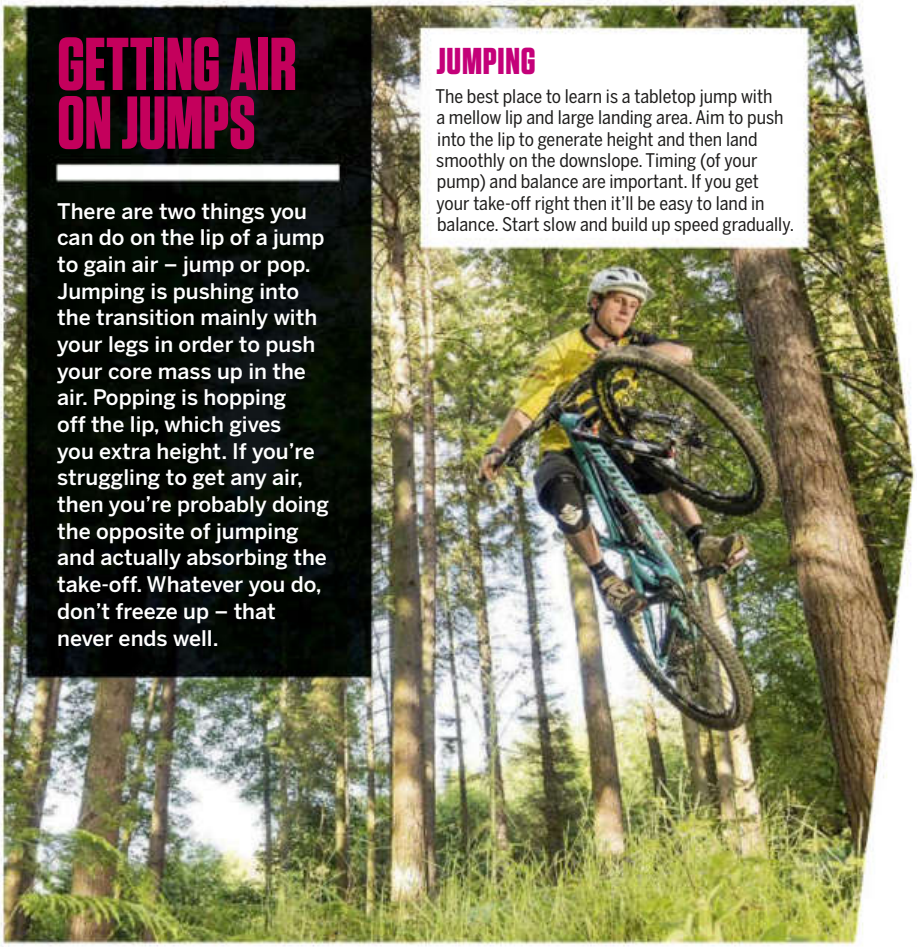
In this feature we explain the two main ways of getting height off jumps – popping and jumping – and two different ways of handling drops. These are the core techniques for getting height off any upslope, and you can adapt them so that you land smoothly and precisely on any downslope. You'll notice that they're based upon two of the core skills – bunnyhopping and pumping – that we covered earlier in this series. It just goes to show that with finely tuned basics in place, advanced skills such as clearing double jumps and conquering big drops aren't totally out of reach. »

GETTING AIR ON JUMPS

There are two things you can do on the lip of a jump to gain air – jump or pop. Jumping is pushing into the transition mainly with your legs in order to push your core mass up in the air. Popping is hopping off the lip, which gives you extra height. If you're struggling to get any air, then you're probably doing the opposite of jumping and actually absorbing the take-off. Whatever you do, don't freeze up – that never ends well.

JUMPING

The best place to learn is a tabletop jump with a mellow lip and large landing area. Aim to push into the lip to generate height and then land smoothly on the downslope. Timing (of your pump) and balance are important. If you get your take-off right then it'll be easy to land in balance. Start slow and build up speed gradually.





1 APPROACH

As you approach the lip, get low so you have room to extend your legs, as if you were going to jump without your bike. Keep your weight through your feet, and your hands light. Remember, the power comes from your legs.



POPPING

Popping is basically bunnyhopping off the highest part of the take-off to generate as much height as possible. If you've ever seen a rider cruise casually into a mellow take-off, then boost and get massive air, that's pop! It's essential that you can do a proper bunnyhop on the flat before trying to pop a jump, so take a look back at part two of this series (*MBUK* 319) if you haven't quite got to grips with that yet. Once you can pop, you can get height off almost anything with a little bit of an upslope. Try it out on a tabletop first, but once you get the technique dialled you'll soon be able to clear doubles.



1 APPROACH

Ride towards the jump at a pace that you know will allow you to clear it. Just as you reach the lip, lower your body weight by bending your legs and arms so that you're ready to pop.



2 PUMP
As you hit the transition from flat to steep, push your weight through your legs and drive the bike into the ground to move your body upwards. The harder you push, the higher you'll go – most riders don't push hard enough when starting out. Timing is important here. If you extend too early you'll travel up the lip with straight legs and get out of shape. You want to be extended at the very top of the lip.

3 RELAX
Once you've left the lip your flight path is pretty much confirmed, so relax your arms and legs and let the bike come up underneath you. Look over the landing. If your front wheel is high, push it down. If your body is rotating forwards and you think you're going to land nose heavy, look up at the sky.

4 LAND
Adjust the pitch of the bike so it matches the slope of the landing either by pushing the handlebar forwards or pulling it back. Aim to absorb the landing with your legs and return to your neutral position so you're ready for the next obstacle.

JUMP OR POP? This depends on your speed and the size of the jump. You can't always hit every jump at the perfect speed to clear it, so being able to get as much height as you need will enable you to land different types of jumps smoothly at varying speeds. If you're going slow and it's a big jump, you'll need as much height as possible to clear it so you'll need to pop. If it's a small jump and you're riding fast, then you can just jump it so that you land on the downslope. Try doing the same jump at different speeds – you'll notice that at slow speeds you'll really have to pop to clear it while faster speeds won't require as much effort.



4 LAND
Push the bike towards the landing by extending your arms and legs. Absorb the landing with your legs and return to your neutral riding position so you're ready for what's coming up next.

2 POP
As the front wheel hits the upslope, time it so that you compress and pop it to get it high off the very top of the lip. Push through your feet and drive your hips up vertically. At the same time, pull the bar so you can continue to push your weight through the rear wheel all the way up the lip – this is what gives you the height. If you don't do this, you won't be able to pop off the top of the take-off.

3 LEVEL OUT
Keep your head up and look over the landing. Allow your legs to bend so the bike can come up beneath you, and push the bar forward to level the bike out. Relaxing your body will keep you in balance. If you go off to the side it's probably because your pop wasn't balanced.

››

LANDING DROPS

With drops, your main focus is on landing safely. As with jumps, you'll need to use a different technique depending on how big the drop is and how fast you're approaching it.

SMALL OR SLOW DROPS

To clear a small or slow drop safely, you need to land with both wheels level and in your neutral riding position. To do this, you need to get the front wheel up while going over the drop, or you could go over the bars (if the drop is too steep to roll) or catch your chainring on the edge. The skill is nearly identical to a manual (see part two), and this technique can also be used for bigger drops approached at slow speeds.

Tip Practise going slow off small drops – you'll soon learn how long you can hold the wheel up for. The longer you can hold it up, the safer you'll be when riding new trails where you don't know what's coming.



APPROACH Stand up on the pedals in your neutral position with your knees bent and heels down, and get ready to compress your suspension fork just before you reach the edge.



PUSH As your front wheel gets close to the edge, compress the fork and push the bike forwards using both your hands and your feet. At the same time, drop your hips towards the rear tyre.



BALANCE Think about keeping your core body mass in balance and not leaning backwards or forwards. Keep your head up and look forwards, then relax and let your legs extend ready for landing.



ABSORB Control the landing by taking the impact with your knees and ankles, keeping your hands nice and light so you can maintain your steering. Always aim to absorb the impact with your legs.

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DROP TO DOWNSLOPE

If you're riding fast or landing on a downslope off a big drop, you need to get onto the ground as soon as possible. This means unweighting the rear wheel (see part two) so you drop down off the edge rather than launch off it. Unweighting the rear wheel will also reduce the risk of hooking up or nosediving. When landing on a downslope you don't need to hold the front wheel up as much, but you still need to push the bike forwards. Before attempting this, you should be able to drop at very slow speeds and on steep gradients.



SPEED It's important to be able to judge your speed correctly. Don't approach the drop too fast or you'll end up launching it instead of dropping.



BODY POSITION Push the bike forwards and drop your hips. Don't confuse getting low with leaning back – that's a recipe for disaster. Unweight the rear wheel as you go over the edge.



TIMING Push the bike away from you just before the front wheel leaves the lip. You should be used to getting your timing in sync with your speed from practising small drops.



LANDING Aim to match the pitch of the bike to the angle of the slope and land in balance. This means landing in the 'downhill body position' as if you were riding the slope (see part one of this series).

COMING UP > ISSUE 322 – TECHNICAL RIDING
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DIFFICULTY

BASIC PRE-RIDE SAFETY CHECKS

TIME 10 minutes
COST Free

Follow these four simple procedures to make sure your bike is ready to hit the trails

CHECK THE BRAKES





1a If your bike is box fresh or borrowed it's worth quickly checking that the brakes are your preferred way round. In the UK, we usually run our front brakes on the right. Check that the right-hand lever is connected to the front calliper and the left-hand lever to the rear calliper.

1b Give the levers a firm squeeze. They should move a little way before stopping with a firm resistance. If not, they may need bleeding (assuming they're hydraulic discs) – talk to your local bike shop if you're not happy doing this yourself.

CHECK TYRE PRESSURES







2a Remove the valve cap. On Presta valves, unscrew the valve head (anticlockwise). Push your digital gauge onto the valve, then remove it to take a reading. If the pressure is low, pump the tyre up harder than necessary, take another reading, then release air using the bleed button on the gauge until the pressure is correct.

2b If you don't have a digital pressure gauge, a track pump with a gauge will provide a consistent – if less accurate – reading. Simply attach the pump head to the valve and pump until the desired pressure is reached (see the Workshop Wisdom box below for some pressure recommendations).

2c If you don't have any sort of gauge you'll have to make do with the good old 'squidge' test. Grip the tyre in your hand and push your thumb as hard as you can into the sidewall. You should be able to move it about 1cm inwards, but no more. Adjust the pressure using a pump if necessary, then retry.

CHECK EVERYTHING'S TIGHT



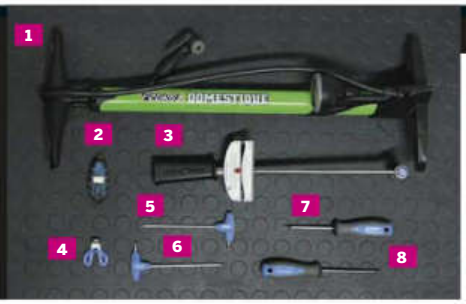




4a Make sure any quick-release levers on the wheels can be closed without obstruction and aren't pointing down. Closing the lever should require firm but not excessive force. If it's too easy, open the lever and wind the nut on the opposite end of the skewer clockwise to increase the tension, before reclosing the lever.

4b Stand next to the bike and hold the fork with one hand while moving the front wheel back and forth with the other. There shouldn't be any play or clunking from the wheel. If there is, you may need to replace the bearings or tighten the cones in the hub. Repeat for the rear wheel, holding the frame.

4c Run your hand over all the spokes on the wheels to make sure they're tight. If just one of the spokes is loose, use the correct sized spoke key to tighten the spoke nipple, turning it clockwise. If several of the spokes are loose, ask at your local bike shop whether your wheel can be trued.



Tools for the job Essential kit

1 Track pump
2 Digital tyre pressure gauge (optional)
3 Torque wrench (optional)
4 Spoke key
5 3mm Allen key
6 4mm Allen key
7 T25 Torx key
8 Phillips screwdriver



1c Lift each wheel off the ground in turn and spin to listen for the rotor rubbing on the pads. If the brake is rubbing, loosen the calliper bolts half a turn with a 5mm Allen key, turning them anticlockwise. Spin the wheel again, then squeeze the brake lever while carefully retightening the bolts. Repeat if necessary until there's no rotor rub.

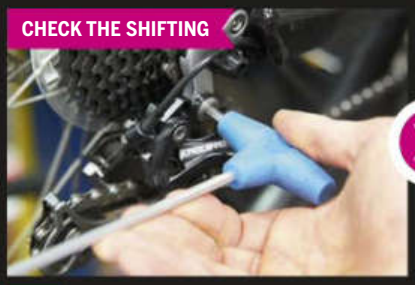


1d Go for a short ride somewhere traffic free and flat. While moving, squeeze the rear brake with one finger – it should be powerful enough to lock up the rear wheel on tarmac. Repeat for the front brake – it should be able to slow you down rapidly without needing to squeeze too hard.



1e Check the brake pads for wear if the brakes are squealing or lacking in power, or you haven't checked for a few rides. With the wheel removed, look down through the calliper. There should be some pad material protruding past the flat springs that push the pads against the pistons.

CHECK THE SHIFTING



3a First check the rear mech is securely attached to the hanger – use a 5mm Allen key to tighten it. Next, check the mech and its hanger are straight. The cage of the mech should hang perfectly vertically. If the hanger is bent, ask your local bike shop if it's repairable – they can order you a new one if it isn't.



3b With the bike in a workstand, spin the cranks while pushing the rear mech towards the wheel. If the chain falls off the top of the cassette, turn the 'L' screw on the mech half a turn clockwise. If the mech won't move far enough over to shift the chain onto the biggest sprocket, turn the screw anticlockwise.



3c Go for a quick ride somewhere traffic free. Shift through the gears, making sure each change is nice and precise. If not, see last month's Grimetime (*MBUK* 320) to guide you through getting your shifting sorted.



4d Check that the handlebar is straight – it should line up with the dials at the top of the fork legs. Next, check all the bolts on the stem are tight, using the appropriate Allen keys. If the bolts need tightening, use a torque wrench to cinch them up to the manufacturer's recommended settings, turning them clockwise.



4e Check for play in the headset. Pull the front brake while rocking the frame back and forth and feeling for movement between the head tube and fork steerer. If there is play, loosen the stem clamp bolts (anticlockwise), tighten the steerer bolt in the top of the headset, straighten the bar then retighten the stem bolts.

WORKSHOP WISDOM

Tyre pressure really affects how your bike rides. As a rule of thumb, run the lowest pressure you can get away with without puncturing or the tyre squirming on the rim. This will give you the most grip and allow the tyre to absorb trail irregularities – it's a myth that higher pressures are faster. Optimum pressure will depend on your weight, riding style, the terrain and tyre choice. Buy a digital gauge for quick and accurate readings. Start with 25psi front and 28psi rear, and work from there. Hit the trails and see how low you can get away with. Stop when you notice your tyres rolling when cornering or if you're puncturing too often.

NEXT MONTH **How to replace a headset**
Swap your bearings for smooth steering **ON SALE 16 OCTOBER**

ASK MBUK

YOUR PROBLEMS SOLVED BY OUR EXPERTS



Cane Creek should have a headset to fit older bikes like the Kona Stab Dee-Lux

Q I recently had a pretty big crash where I managed to bang my favourite Specialized Vice helmet up pretty badly. Although the outer shell has some scrapes and a small dent in it I can't see any damage to the polystyrene inner shell. Am I OK to keep wearing this or should I look to replace it? I'm reluctant to fork out for another lid because they're not cheap. Any advice would be much appreciated.
Dale Saunders, via email

A We'd recommend that you stop wearing the helmet. You may not be able to see any damage to the EPS liner – from the inside, at least – but if it's been compromised in any way it'll make the helmet less effective if you take another tumble, so it's not worth the risk. Fortunately, like several other top helmet brands, Specialized offer a crash replacement scheme. If you return your lid to an authorised dealer you should be able to buy a new one at a 40 per cent discount. As far as we're aware it doesn't have to be a like-for-like replacement either, if you're keen on a different model from the range.



If you've banged your head in a crash we'd always recommend a new lid

Q **I own a Kona Stab Dee-Lux from 1999 and can't find out what headset size it uses. The bike is fitted with a Marzocchi Monster T fork, if that helps?**
Kev Laing, via email.

A Ah yes, quite the classic you have there! The Stab Dee-Lux pre-dates tapered and 1.5in fork steerers so we'd bet it takes a fairly standard 1.125in number. Because's the bike's so old we've struggled to get hold of any specific info, but if you head to **www.canecreek.com/headset-fit-finder** and carefully follow each of the steps, which will involve taking various measurements, this should arm you with details of the exact headset you're after.

Q **I wanted to get a Rocky Mountain Altitude 790 MSL Rally Edition, but it's too pricey for me. Is there anything similar I can get for £1,500-£2,000?**
Joe Fox, via email.

A Luckily for you there are a couple of options that boast similar amounts of travel and are within your price range. The Vitus Sommet VR has 155mm (6.1in) of travel at the rear and will set you back a smidge under £2,000. Our man Ric has the slightly pricier VRX version and absolutely loves it. Alternatively there's the YT Capra AL 2. This is slightly cheaper at £1,838 (with bike box and shipping), has 165mm (6.5in) of rear travel and comes with the highly acclaimed RockShox Pike RCT3 Solo Air fork.

QUICK FIX MOUNTAIN BIKE TIPS

Connect your chain with a quick link



01 Thread the chain through the rear mech, over the cassette and around the chainring, then rest the chain off to the side of the chainring to remove any tension. Insert a quick link plate into each end of the chain, opposite ways around.



02 Locate the quick link pins in the slots in the opposing quick link plates. Hold the chain on either side of the quick link and pull it away from the quick link. This should slide each of the quick link pins down to the narrower end of the quick link slots.



03 Put the chain back on the chainring. Spin the cranks until the quick link sits above the chainstay. Put downward pressure on the cranks to tension the chain and ensure that the pins are properly located in the quick link slots. Go ride!

CONTACT US: **Write to:** Ask *MBUK*, 2nd Floor, Tower House, Fairfax Street, Bristol **Email:** askmbuk@bikeradar.com **Visit:** www.mbuk.com

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MBUK BIG RIDE

IN ASSOCIATION WITH viewranger



WOODBURY COMMON, DEVON

IT MAY BE SMALL BUT THIS AREA HAS SOME GREAT SINGLETRACK – JUST WATCH OUT FOR MARINES AND OBSTINATE WILD PONIES

Words Max Darkins **Pics** Russell Burton





IT'S A FAB LITTLE ROOTY TRAIL THAT TWISTS BETWEEN THE TREES BEFORE A STEEP CLIMB BACK OUT OF THE VALLEY

THE LOWDOWN

WOODBURY COMMON, DEVON



An area of common land between Exeter and Exmouth, it's mostly heathland with clusters of woods and has lots of tracks, with almost Scottish-like open access.

With the stunning scenery of Dartmoor and the purpose-built trails of Haldon Forest nearby, it's easy to overlook the other riding Devon has to offer. Woodbury Common is an Area of Outstanding Natural Beauty and Site of Special Scientific Interest. Mountain bikers are welcome to ride most of the myriad trails, but asked to stay away from breeding areas and archaeology sites and to follow the code of conduct.

We meet Chris Warburton from Exmouth bike shop Knobblies at the Four Firs car park in the centre of the common. Despite being able to ride in any direction from here our choice is uphill, but a good track soon has us by the Iron Age hill fort of Woodbury Castle. The ramparts and ditch aren't for riding though, so we pop out of the trees and onto the open heathland. There are a lot of tracks criss-crossing the common and not much to navigate by, so it can look a little sparse and daunting. Our planned route skirts the heathland where there's a thin line of trees, providing easier navigation and lots of great twisty singletrack.

Foliage fights back

We dive off onto a section of singletrack beside the main track, where the gorse lining the sides punishes any deviation from the trail with puncture wounds to arms and legs. These prickly, tingly sensations are something we discover this route excels at







With so many paths across the heathland, navigation is tricky



Gorse may look pretty but give it a wide berth or you'll bear the scars

dishing out – if it isn't gorse it's heather, branches or stingers.

A left turn drops us steeply down to a wide track that we join briefly before peeling off onto a thin trail that's marked as a footpath but game to be ridden. The trail is known as 'Dog in wood' – a name that, when shouted to fellow riders, can be easily confused with certain car-based shenanigans! It's a fab little rooty trail that twists between the trees before a steep climb back out of the valley. Along the way we somehow manage to lose our photographer, Russell. I decide it's best to ride the trail again to find him – it's only polite (and excellent fun).

We manage to locate him soon enough and continue on our way, dropping back down to the edge of the common no sooner than we've got back to the top. This time, at the bottom of a steep descent we hang a right to follow the tree line once more, gently climbing as we go. If the last trail was 'Dog in wood' I declare this trail to be 'Dog log in wood' as we weave around some unwanted trail features. Crossing over a wide track, we keep to the edge of the common, following a fun undulating, twisty trail through the thin line of trees.

Chris boasts of his top Strava position on this next section of long, rooty trail, but some horses and photo stops along the way put paid to any fresh challenges today. Despite the Royal Marines not using live ammo, we turn away from the 'Danger Area' of Colaton Raleigh Common and join a singletrack trail beside the main track, down through a pine wood. After numerous confusing direction changes we're soon on a great little narrow trail through Crook Plantation, though a number of recent fallen trees and branches have us picking our own different ways down – including some over-the-bars moments. A climb back out »

BEST EATING

There's nothing on the route, but just along the road in Woodbury village is the family-run Maltsters Arms. This serves up good cask ales and nice home-cooked food (**www.themaltstersarms.com**). Further along the B3179, in Topsham, is the Route 2 Cafe, rated as one of the top 10 cycling caffs in the UK by *The Guardian*. This eco cafe is situated right on the beautiful Exe estuary, offering lovely home-cooked food, from breakfast through to afternoon tea, and can even offer you a cheeky ale or glass of wine. There's a small bike shop attached and some lovely self-catering apartments (**www.route2topsham.co.uk**, 01392 875085).



FALLEN BRANCHES HAVE US PICKING OUR OWN WAYS DOWN – INCLUDING SOME OVER-THE-BARS MOMENTS

the other side, aptly named 'F**k it Hill', has us wiggling our way along the edge of Uphams Plantation before we cross a road for our first reminder that we're still close to civilisation. Through Bicton Common we get to appreciate the views across this huge, barren heathland – briefly, because our eyes are fixed on the rough drop downhill via some big orange earth-berms.

Commando mission

We now enter the Marines' training ground, where all manner of tunnels pass beneath us that the poor squaddies have to crawl through, semi submerged and in pitch black. Even crazier is that the general public can put themselves through this torture in the annual Commando Challenge. We decide to refrain from the 'Sheep Dip' experience at the bottom, though the trail out the back is pretty much a stream and soaks us through anyway. Just along here some wild horses refuse to move out of our path, obviously used to scarier looking opposition, forcing us to trudge around them to continue on our way.

A thin track weaving through the low heather – though not low enough not to put plenty more little pin-prick holes in our shins – leads us back down into the woods. The Marines, with their love of water, have saturated this area to create more mud baths and tunnels to crawl through, but we're quite happy to skirt around it.

Some fast and easy-to-navigate trails bring us around the southern edge of the common to Blackhill Quarry, where a fast descent leads us down to the foot of the last, but probably biggest, hill of the day. The end is in sight though, so we enjoy a gentle cruise back along the final leg of our journey and get to reflect on how it may not be a huge ride, but there's still a huge amount of fun riding packed into this diminutive area.

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- Location is pretty exposed
- Facilities and tea room are a little quaint

WRECKING CREW

Mountain Biking UK

Hamsterley Forest, County Durham

We head north to check out Descend Bike Park and the miles of XC trails criss-crossing these woods

Words Joe Rafferty **Pics** Mick Kirkman

On the edge of the wild North Pennines, Descend Bike Park cuts into a steep-sided valley hidden in the 2,000-hectare Hamsterley Forest. Next to this playground of drops, chutes and DH tracks is an ever-expanding network of singletrack that threads its way through the trees and out onto open heather moorland. These two different flavours coming together make Hamsterley a wicked place to »



DESCEND IS A PROPERLY ACE PLACE FOR CUTTING SOME SHAPES AND HONING YOUR SKILLS

ride a mountain bike. Since its National Points Series (NPS) downhill track put Hamsterley on the map in the early 2000s, it's always been the place to hit up if you want to smash some proper downhill runs in the North.

There's a maze of tracks, jumps and lines hand-sculpted into the hillside, some of which are gnarly enough to keep former world DH champ and Hamsterley local Danny Hart entertained. Descend is a properly ace place for cutting some shapes and honing your skills, but it's definitely a 'full-face helmet only' job and not suitable for novices.

For riders not craving full-on DH tracks, the trail centre built on the Forestry Commission land around the bike park has improved beyond all recognition over the years, and there's now something for riders of every level to get stuck into. The Hamsterley Trailblazers club and their army of volunteers have driven the development forward, raised funds and built some classic sections like Transmission, Accelerator and Section 13. Thanks to their efforts, what was once a bit of a slog around the hills with a few fun bits has morphed into a proper, challenging and worthwhile trail centre.

The latest piece in the trail puzzle is the newly built OddSox section. The weird name comes from the Beamish OddSox mountain bike club, whose members liked the riding up here so much that they decided to raise funds for more trail building. The Trailblazers used the cash to design and construct a swooping gully section down through a part of the forest that needed some help to make it flow. It joins a handful of recently completed sections that bring Hamsterley closer than ever to having a full singletrack circuit that's fun and furious right from beginning to end.

Gravity games

Our day in County Durham begins in Descend Bike Park, where we get a few runs in from top to bottom, picking up speed and confidence as the morning progresses. It's not a massive hill, with only around a 150m drop, but there's tons packed into a small area and some surprisingly steep and challenging lines on some of the lower parts.

Local hero Danny Hart honed his teenage skills here and »



There are loads of jumps at Descend Bike Park for you to practise on







The Wrecking Crew Who are we?



JOE FLANAGAN
Super-stylish DHer turned Hope enduro racer. Also skills coach for Pro Ride



JOE RAFFERTY
Pro Ride head man, 'Ard Rock Enduro organiser and *MBUK* skills guru



RAFI RICHARDSON
Rakish country gent who's given up DH to slash some mean shapes on trail bikes



JAMES RISKER
Scarborough's silent assassin. Only races DH if it's not raining, then usually wins



ALEX EVANS
Features Ed Alex is fresh from the Alps, ready to sample the UK's finest trails



JAMES BLACKWELL
Five feet of trouble and energy. Jimmer rides quick and talks even quicker



If you like your runs rocky, steep and technical, this is the place to come





There are multiple tracks and features hand-built into the hillside



A QUICK BREW AND POT NOODLE AT THE TEA HUT SETS YOU UP TO HIT UP SOME OF THE MELLOWER MANMADE TRAILS

LOCAL KNOWLEDGE

LOCALS DO...

- Session loops
- Avoid eroding the natural tracks

LOCALS DON'T

- Ride the boring part of the red out towards Five Lane Ends
- Follow the waymarked, routes to the letter

his times aren't much over a minute from top to bottom, but no one else comes close at Hammers. If you're getting down the hill in under two minutes on an enduro bike, you're doing pretty well.

The old NPS track is a flat-out blast, with off-camber sections and multiple line choices coming at you in a blur. It's really hard to memorise and find the best lines every single run. There are plenty of jumps and drops, both on the tracks and standing alone in the woods, that make Descend an awesome place to improve your handling skills and style it up for the camera. If you pedal up you can manage six runs in a morning if you crack on, but Descend also run an uplift service (£7 for a day pass), where you can expect to get around 10 full runs in a day, with a stop for lunch.

Smashing runs

A quick brew and Pot Noodle at the newly done up tea hut after smashing the DH runs in the woods sets you up to pedal out into the moorland and pines to hit up some of the mellower manmade trails. Immediately out of the car park is Section 13, which winds its way diagonally across Windy Bank. It starts with a fun gravelly trail that needs some pedal power to maximise speed on the upper part, but a fast gully follows »



WRECKING CREW WISDOM

Pack a full-face helmet if you want to session the tracks at Descend Bike Park. We rode 160mm bikes but the trails justify a DH bike if you've got one. The trail centre is fun on any bike. Tyres with bigger knobs work best if you plan on hitting the steeper off-piste stuff, and pack a jacket because it can get pretty cold. Hooking up with local riders is the best way to discover the vast network of trails in the forest.

JOE RAFFERTY PRO RIDE SKILLS COACH

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Racer and Yorkshireman Joe Flanagan styles it up in the bike park

before a straight line of moto-style tabletops spits you out onto a fireroad. A big anticlockwise loop from here means you can take in all of the best stuff and end on many local riders' favourite descent – Transmission/Nitrous – before crossing the river to pedal back up to the car park.

A grand day out

Packing both the bike park and the trail centre into a day is a proper workout, especially if you lap some natural trails on the way round. The massive range of terrain goes from steep and nasty to mellow and fast kitty-litter flow trails, by way of some technical and dark tracks in the woods. There's so much to go at you can do a different ride each visit.

It's this choice and variety that keeps riders coming back for more, and the forest has been busier than ever over the past couple of years. If you've never been to Hamsterley, you're missing out on some seriously good riding. And, whether it's the lads at Descend Bike Park carving ever more creative and interesting DH lines, or the Trailblazers putting spades in the ground or fighting hard to raise funds to keep improving the trail centre, Hamsterley Forest just keeps on changing for the better.

THE DIRECTORY

EVERYTHING YOU NEED TO KNOW ABOUT **HAMSTERLEY FOREST**

GET THERE

Hamsterley is a 30-minute drive north-west of Darlington and is within easy reach of Newcastle and Middlesbrough, but it does feel like you're driving into the middle of nowhere. Park at Descend Bike Park in Windy Bank Road for the pay-to-ride DH trails or uplift, and down at the main Forestry Commission car park at the visitor centre for the trail centre. The postcode for sat-navs is DL13 3NL.

CONTACTS

www.descendbikepark.co.uk
www.hamsterley-trailblazers.co.uk
www.forestry.gov.uk/forestry/infd-8z4ktl

FACILITIES

Tea room at visitor centre, bike wash and tea hut at Descend Bike Park

BIKE SHOPS

Wood N Wheels, at visitor centre
www.woodnwheels.org.uk
Inspiral Cycles, Bishop Auckland
www.inspiralcycles.co.uk

WHAT ELSE IS NEARBY?

Guisborough Forest
Blue and red XC trails near Redcar
Chopwell Woodland Park
Short but fun red loop on Tyneside

VERDICT

The best place in northern England for DH – the challenging hand-sculpted runs range from fast and swoopy to rocky, steep and technical and are Danny Hart approved. Some brilliant red-graded trail centre sections and secret enduro trails dotted about in the forest mean there's tons of trail riding to attack too

★★★★☆

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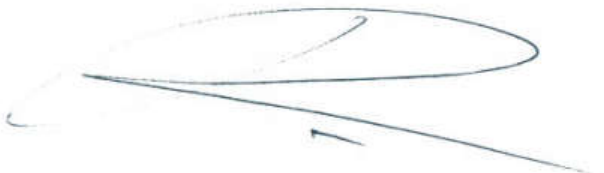


Bike fettling made easier

Whether you're a budding semi-pro mechanic or you wobble at the knees at the very mention of a torque wrench or Torx key, this maintenance guide has something for you. If your bike sounds like a bag of spanners and you don't even know how to use a pedal spanner, then look no further. Even if you can already service your headset and know how many psi to put in your rear shock, we're sure you'll still learn something.

So next time something goes wrong with your bike, don't just leave it to gather dust in your shed – grab this guide and find out how to replace your BB, true your wheels or simply fix a puncture. We've also covered some useful set-up tips for your contact points and suspension, as well as ways to silence a rattling bike – so there are no more trailside excuses!

Get your pinny on and your latex gloves stretched out and crank up your favourite tunes – it's time to get down and dirty and get your bike rolling like it was when it was box fresh. Good luck!



Robin Weaver, Technical Editor in Chief

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SWAP BRAKE PADS

Freshen up your braking or boost power and modulation with a new set of pads

DIFFICULTY: BEGINNER
TIME TAKEN: 5 MINUTES
COST £5+ FOR NEW PAD SET

TOOLS FOR THE JOB
1. Thin flat-head screwdriver
2. Allen key set or Torx key set (depends on brake)



01 Remove the wheel. Insert a flat-headed screwdriver between the brake pads and push them outwards – this will cause the pistons to retract. If there's a small C-clip at the end of the threaded pin holding the pads in place, use a thin flat-head screwdriver to pop it off. Put it somewhere safe.



02 Use the appropriate size Allen or Torx key (this depends on the brake brand and model) to remove the threaded pin, turning it anticlockwise. Pull out the old pads and spring from the top of the calliper.



03 Slot the new pads and spring into place and replace the threaded pin, turning it clockwise. If there was a C-clip fitted before, push it back into the groove at the end of the pin. Replace the wheel in the frame or fork and pump the brake lever until it feels solid.

ALIGN BRAKE CALLIPERS

Eliminate brake rub and improve performance with proper calliper set-up

DIFFICULTY: BEGINNER
TIME TAKEN: 5 MINUTES
COST FREE

TOOLS FOR THE JOB
1. 5mm Allen key
2. Torque wrench



01 Clamp your bike in a workstand or flip it upside-down so the wheels can spin freely. Starting at the back, use a 5mm Allen key to loosen both calliper mounting bolts until the calliper can move from side to side.



02 Apply pressure to the rear brake lever, firmly clamping the pads onto the rotor. This should centre the calliper. Gently pinch up each of the calliper bolts until you reach the manufacturer's recommended torque setting.



03 Spin the wheel and listen carefully for signs of the pads rubbing the rotor. If there is rubbing, check the rotor is straight and recheck the calliper alignment. Repeat steps 1 and 2 if necessary, before moving onto the front brake.

FIT BRAKE ROTORS

If you've got new wheels or new stoppers, here's how to fix your discs

DIFFICULTY: BEGINNER
TIME TAKEN: 10 MINUTES
COST £10+ FOR NEW ROTOR

TOOLS FOR THE JOB
1. Torx T25 key (six-bolt disc)
2. Hollowtech II BB tool (Center Lock disc)



01 Disc brake rotors are directional – there's normally a small arrow etched onto one side of the rotor showing which way it should rotate. Make sure this side of the rotor faces away from the hub. Before buying check whether your hub has a six-bolt or splined Center Lock rotor mount.



02 With a six-bolt rotor, line the bolt holes in the rotor up with the bolt holes in the hub flange. Use a Torx T25 key to screw in opposite bolts until they're all at the manufacturer's recommended torque setting.



03 With a Center Lock rotor, push the rotor onto the splines on the hub flange, then screw on the lockring by hand. Use a Hollowtech II BB tool to tighten the lockring to the manufacturer's recommended torque setting, while holding on to the wheel.

SET UP YOUR SUSPENSION

To get the most out of your fork and shock you need to adjust the sag and damping to suit your riding style and body weight. Basic set-up of air suspension is a relatively easy job that can be done out on the trail

DIFFICULTY: BEGINNER
TIME TAKEN: 25 MINUTES
COST FREE



Preparation

01 Put on your riding gear and pack (if you normally use one) – the extra weight will affect how your suspension behaves. Ensure the fork stanchions and shock shaft are clean. Turn any compression or lockout dials to the 'off'/'open'/'descend' position. If your fork doesn't have a sag indicator O-ring, wrap a ziptie loosely around one stanchion.



02d Remove the pump and measure the sag again. Repeat steps 2a to 2d until the sag is set to your desired level. Reinstall the valve cap and remove the ziptie, if fitted. If your fork has a coil rather than air spring you'll need to use the preload adjuster to adjust the sag. If you still can't achieve the required sag, you'll need to swap to a lighter or heavier spring.



Air shock sag

03a To measure the sag on an air shock, sit on the bike and use your weight to cycle the shock through its travel. Dismount and lower the saddle. Slide the sag indicator along the shock shaft until it sits next to the seal. Sit on the bike, putting all your weight on the saddle but not bouncing the suspension. The shock should compress a little. Dismount carefully.



03b If there are sag markings on the shock shaft, read off the sag percentage indicated by the bottom of the O-ring. If not, use a tape measure to determine the distance from the O-ring to the seal. Divide this measurement by the shock stroke (this is often written on the shaft – if not, see step 03c), then multiply by 100 to calculate the sag percentage.



Rebound damping

05a Now you need to determine how fast your suspension rebounds after impacts. Push down on the fork without bending your knees to compress it. As it rebounds, keep your body rigid so the fork can move naturally. It should extend past its sag point and then return to it without oscillating. Repeat with the rear shock.



05b If the fork/shock extends past its sag point and then oscillates back down below it, slow the rebound down by turning the rebound dial clockwise. If the fork/shock doesn't extend past its sag point, speed up the rebound by turning the dial anticlockwise. Repeat this step until there's no oscillation after the fork/shock rebounds above its sag point.



05c To fine tune the rebound damping, find a rough section of trail and ride it repeatedly while experimenting with different settings. If the rebound is too slow, the suspension will 'pack down' and become harsh over the later hits. Turn the rebound dial anticlockwise to speed it up. Repeat until the suspension feels consistently controlled over the bumps.

TOOLS FOR THE JOB
1. Ziptie
2. Tape measure
3. Shock pump



Fork sag





02a Without sag, the suspension can't extend into holes as you ride. Cycle the fork through its travel, then move the O-ring/ziptie to the bottom of the stanchion. On level ground, using a wall or friend for balance, assume the 'attack' position (pedals level, knees bent slightly, elbows forward). Carefully dismount without compressing the fork any further.

02b If there are sag percentages marked on the fork stanchion, read off the figure indicated by the bottom of the O-ring. If not, use a tape measure to determine the distance from the fork seal to the bottom of the O-ring. Divide this measurement by the travel of the fork and then multiply by 100 to calculate the sag percentage.

02c See Workshop Wisdom below for advice on how much sag to run. To alter the sag in an air fork, attach a shock pump to the Schrader valve at the top of the air spring, screwing the chuck clockwise onto the valve until it won't go any further. To reduce the sag, add more air. To increase the sag, use the pump's bleed button to remove some air.







Coil shock sag

03c To measure the shock stroke, attach a shock pump to the Schrader valve. Note the pressure, then press the pump's bleed button to release all of the air. Remove the pump, then sit on the bike to bottom out the shock. Dismount, reinflate the shock to its original pressure and remove the pump. The distance from O-ring to seal is the shock stroke.

03d See Workshop Wisdom below for advice on how much sag to run. To alter the sag in an air shock, attach a shock pump. To increase the sag, use the pump's bleed button to remove some air. To decrease the sag, pump more air into the shock. Remove the pump, then measure the sag again, as in steps 03a and 03b. Repeat until the sag is it at your desired level.

04 To measure the sag on a coil shock, first use a tape measure to determine its eye-to-eye length. Next, sit your full weight on the saddle and get a friend to measure the new eye-to-eye length. The difference between the two is the sag. The sag percentage can be calculated as in step 03b using the shock stroke. To alter the sag, you'll need to swap to a lighter or heavier spring.





Compression damping



05d If the rebound is too fast, the fork will feel jarring and uncontrolled, and the rear end will feel bouncy, with a bucking sensation on jumps. Grip will suffer too. Turn the rebound dial clockwise to slow it down. Repeat until the suspension feels consistent and controlled. The rebound speed of fork and shock should be similar, but ideally slightly faster on the front.

06a Many forks and shocks have low-speed compression damping adjusters. These include Fox's CTD lever and RockShox's three-position dial, as well as more precise indexed dials. Some offer high-speed compression damping dials too. The 'high' and 'low' speeds relate to the speed at which the fork or shock compresses upon impact, not the speed at which you're travelling.

06b Adding more low-speed compression will reduce diving and wallowing when braking, cornering, pedalling and riding through compressions. Adding more high-speed damping will help keep the bike stable when slamming through roots, rocks, square-edged hits and braking bumps. Turn the dial(s) clockwise to increase the amount of compression damping.

WORKSHOP WISDOM

As a basic rule of thumb, start with 20 per cent sag for cross-country, 25 per cent for trail riding and 30 per cent for downhill. These are good base settings, but you may need to adjust them according to your riding style and preferences.

FIX A PUNCTURE

Being able to fix a puncture is an essential skill for any mountain biker. It can save your ride if you get a flat out on the trail, or get your bike rolling again after it's gathered some cobwebs

DIFFICULTY: BEGINNER
TIME TAKEN: 30 MINUTES
COST £2 FOR A REPAIR KIT, £5 FOR A NEW TUBE



01 Give your bike a good clean before attempting to fix the puncture. Pay particular attention to the wheel with the flat tyre, making sure you get rid of all the muck. Give the bike a quick wipe down to dry it, then clamp it in a workstand or flip it upside-down so that it rests on the handlebar and saddle.



05 Slowly run your hand around the inside of the tyre, checking for anything that could have penetrated it and caused the puncture. If you come across a thorn or other item of debris, use needle-nose pliers to carefully pry it out, making sure there's nothing left stuck in the rubber that could cause another flat. Once removed, continue to check the rest of the tyre.



06 It's now time to inspect the damage to the inner tube and assess whether or not it's repairable. If you plan on fitting a new tube regardless, skip to step 13. Otherwise inflate the inner tube, ideally using a track pump. Once inflated, you should be able to spot the hole in the tube. If you can't see the hole, hold the tube close to your face and feel/listen for leaking air.



07 If you still can't locate the hole, fill a washing-up bowl with water and slowly pass the tube through it. The leaking air will create bubbles, making it easy to spot the hole. If there are two large, parallel holes – known as a 'pinch flat' or 'snakebite' – it'll be tricky to fix and easier just to fit a new tube. If there's a single hole less than 2mm wide, it should be easy to fix.



11 Hold the tube between your thumbs and forefingers, with your thumbs on the paper patch backing. Pull your thumbs away from each other to create a tear in the paper backing. Peel the torn paper backing off the patch from the centre outwards, making sure the patch stays stuck firmly in place.



12 Attach your pump and partially inflate the tube. Dunk the patched area in the washing-up bowl full of water and watch for bubbles. If there aren't any, the tube is ready to be fitted. Remove it from the water and dry it. Grate some chalk from the repair kit all over and around the patched area of the tube to prevent it sticking to the inside of the tyre.



13 Check the tyre for debris one last time. Slot the valve stem of the tube back through the valve hole in the rim bed and sit the tube back inside the tyre. Starting opposite the valve, use both hands to fold the tyre bead over and into the rim. Work your way around the rim, moving your hands in opposite directions and making sure not to pinch the tube in the process.

TOOLS FOR THE JOB

1. Workstand
2. Allen key set
3. Tyre levers
4. Needle-nose pliers
5. Pump (a track pump is best)
6. Washing-up bowl
7. Marker pen
8. Puncture repair kit (containing patches, glue, sandpaper and chalk)







02 Rotate the wheel in the frame or fork and inspect the tyre for damage. If you find any, note where it is in relation to a logo on the tyre. Remove the wheel, replacing the axle in the frame/fork for safekeeping. Deflate the tube by pressing the valve core down with a 3mm Allen key (Schrader/car type) or turning it anticlockwise and pressing it down with your finger (Presta).

03 Facing the wheel side-on, rotate it, pushing the closest bead (lower edge) of the tyre into the centre of the rim bed with your fingers as you go. Hook a tyre lever over the rim and under the bead, and use it to lever the tyre upwards and over the sidewall of the rim. Then hook the looped end of the lever over the closest spoke. Position a second ever 50mm from the first.

04 Unhook the first lever and reposition it 50mm further on from the second lever. Continue working your way around the wheel, one lever at a time, until one side of the tyre is completely removed from the rim and you can see the inner tube. Find the inner tube valve and pop it out of the rim and tyre. Remove the rest of the tube from the tyre.







08 Draw an 'X' over the hole with a marker pen to make it easy to locate. Then use the sandpaper from your puncture repair kit to lightly roughen up the affected area. It's worth sanding an area that's a little bigger than the patch you're going to use for the repair. Make sure you don't roughen up the tube so much that you wear off your location mark though.

09 Coat the sandpapered area with glue from your puncture repair kit. A thin, even coating is all you need. Hang the tube somewhere dust-free to wait for the glue to become tacky (not dry!). This should only take a minute or two. While waiting, pick a suitably sized repair patch and remove the foil backing, leaving the paper covering on the opposite side attached.

10 With the glue now feeling tacky, place the patch centrally over the mark you made on the tube, ensuring you cover the hole completely. Make sure it's stuck down evenly by using the rounded back of one of the tyre levers to press it down, working from the centre of the patch outwards to the edges. Now it's time to remove the paper patch backing.







14 You may find there's a small section of tyre near the valve stem where the bead is too tight to seat by hand. If so, hold one of the unseated sections of bead in place with your hand (to prevent it coming out of the rim further) and at the other end of the unseated section, use a tyre lever to hook the bead gently into the rim, being careful not to pinch the tube.

15 When the tyre is back on the rim, double check the valve area to ensure the bead is correctly seated. You may need to manipulate the valve gently until the bead sits snuggly around it. Working your way around the tyre, push the bead into the centre of the rim. Then attach your pump and start to inflate the tyre.

16 Keep an eye on the tyre bead as you're pumping to make sure it's seating evenly and not bulging anywhere. Once the tyre is at your desired pressure, do another visual check to make sure the bead is correctly in place before refitting the wheel to your bike.

WORKSHOP WISDOM

The more often you remove and fit tyres, the more likely you'll be able to do it without tyre levers. The technique is complicated to describe but intuitive if you're doing the task a lot! Using tyre levers increases your chances of pinching the tube when refitting the tyre, so don't use them if you don't have to.

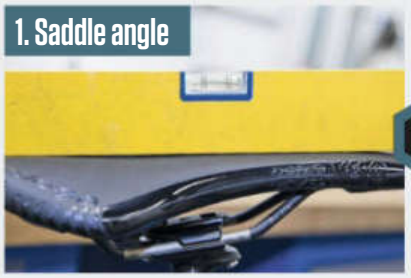
SET UP YOUR CONTACT POINTS

DIFFICULTY: BEGINNER
TIME TAKEN: 30 MINUTES
COST FREE

A few simple adjustments to your seating, steering, braking and shifting can make your bike more comfortable, efficient and confidence-inspiring, potentially transforming your riding in the process



1. Saddle angle







01 If the nose of your saddle is angled too far up or down you'll waste energy constantly trying to correct your body position. It should be sat roughly horizontal (parallel to the floor – use a spirit level for extra accuracy), though if you spend a lot of time climbing, tipping the nose down slightly can improve comfort and your position on the bike.

02 If your seatpost has a single-bolt saddle clamp, use the appropriately sized Allen or Torx key to turn the bolt anticlockwise until it's loose enough that you can adjust the saddle angle. Tilt the saddle to your required angle, being careful to maintain the same clamp position on the saddle rails. Retighten the bolt to the manufacturer's specified torque setting.

03 If your seatpost has a twin-bolt clamp, loosen both bolts until you can move the saddle. Tilt it to your required angle, being careful to maintain the same position on the rails. Tighten the front bolt, stopping before the saddle angle starts to alter. Then tighten the rear bolt, ensuring the saddle remains in the correct position, until you reach the correct torque setting.

DON'T FORK OUT FOR THAT UPGRADE JUST YET...

You can go further than we have here by fitting a bar with a different rise or sweep, a longer or shorter stem, swapping your saddle, and so on. But you should be able to achieve a pretty good set-up that'll improve comfort and control without spending a single penny.

4. Bar position





01 Bar width comes down to personal preference, but too narrow and your high-speed control will be compromised, and too wide and you'll feel stretched out and uncomfortable. If you have lock-on grips, you can experiment by moving them inwards to see how a narrower bar would feel. If you decide to cut the bar down, remember to 'measure twice, cut once'.

02 Rolling the bar can make a big difference to your riding position. Use an Allen key to loosen the stem's bar clamp bolts, turning them just enough so you can rotate the bar (if you have a carbon bar, undo the bolts fully). Sit on the saddle and roll the bar forwards and backwards to find the best position. Retighten the bolts to the correct torque.

TOOLS FOR THE JOB

1. Spirit level
2. Allen key set
3. Torx key set
4. Torque wrench

2. Saddle height



01 Saddle height is very important – even 1-2mm can make a big difference to your pedalling efficiency and comfort. Loosen the seat collar (the clamp at the top of the seat tube) by turning the Allen bolt anticlockwise or flipping out the quick-release lever and turning it anticlockwise. Adjust your saddle to roughly the right height, then tighten the bolt/QR. If you have a dropper post, check it's fully extended.



02 Sit on the saddle and rotate the cranks so one foot is in the 12 o'clock position and one at 6 o'clock. With your saddle at the correct height you should be able to rest your heel on the lower pedal with your leg almost straight. This means when you clip in – or on flat pedals, when the ball of your foot is over the pedal axle – your knee should be slightly bent. Raise or lower your seatpost until you achieve this.

3. Bar height



01 A higher bar creates a more relaxed, sat up position on the bike. This is great for steep downhills because it pushes your body weight further back, but can leave you fighting for front wheel grip on flatter tracks and climbs. Getting bar height right takes time so it's worth trying a variety of positions. You can get bars with different rises, but for starters try experimenting with the spacers above and below your stem.



02 Insert a 5mm Allen key into the stem's top cap bolt and turn it anticlockwise to loosen and remove the bolt and top cap. Then use a 4 or 5mm Allen key to loosen both of the stem's steerer clamp bolts, again turning them anticlockwise. Remove any spacers above the stem, slip the stem off the steerer and then remove any spacers below the stem – leaving the top cup of the headset well alone.



03 The more spacers you place under the stem, the higher your bar will sit. Likewise, the more spacers you remove from below the stem and place on top of it, the lower your bar will sit. Reinstall the stem and spacers in the configuration you'd like to try, making sure there are the same total number of spacers on the steerer tube as before. We'd recommend only moving one spacer at a time.



04 Pop the stem's top cap and top cap bolt back in place. Turn the bolt clockwise – it's there to tension the headset bearings so only needs to be tight enough to remove play in the headset. To check for play, hold the upper headset assembly between thumb and forefinger and rock the bike back and forth. Straighten the stem so it's in line with the front wheel and tighten the steerer clamp bolts to the specified torque.

5. Lever position



01 Once you're happy with your bar position and height, it's time to adjust your brake levers and shifters. Use the appropriate Allen or Torx key to loosen all the clamp bolts so the levers and shifters can be moved easily along the bar. Sit on the saddle and hold the bar as if you were riding, leaning against a friend or a wall so you don't topple over.



02 Stretch out your index fingers. Move each lever so the crook at the end of the lever blade is under your finger, then cinch up the clamp bolts. Now do the same with the shifters, ensuring they're easy to reach but don't get in the way. Once everything is in place, check all the bar clamp bolts are tightened to the manufacturer's specified torque settings.



03 Many brakes offer tool-free lever reach adjustment and some have bite point adjustment too. Lever reach is the most important. You want the lever to be close enough to the bar so you can hook your index finger over it, but not so close that it touches your other fingers when you brake. Turn the dial or use a 2 or 2.5mm Allen key to adjust the reach.

WORKSHOP WISDOM

Adjusting your bike's contact points can make a huge difference to your ride, and it's worth experimenting to see how different set-ups can feel. As so much of this comes down to personal preference, take your time, only altering one thing at a time and taking note of the effect. If you're after some specific advice or need some help, go and chat to an expert in your local bike shop.

FIT NEW CABLES & INDEX YOUR GEARS

Smooth, accurate shifting can be the difference between sailing effortlessly up a steep climb and being left at the bottom, turning the air blue as you struggle to get into the correct gear. Follow our step-by-step guide to get everything running as smoothly as it should

DIFFICULTY: BEGINNER TO INTERMEDIATE
TIME TAKEN: 30 MINUTES
COST APPROX £25 FOR NEW CABLES, END CAPS AND FERRULES



01 Make sure your bike is clean, then clamp it in a workstand. Check that the rear mech and its hanger are straight, and that the bolt holding the mech onto the hanger is tight. While turning the cranks, shift into the smallest cassette sprocket and smallest chainring. Use a 5mm Allen key to loosen the cable clamp bolts on both mechs a few turns, turning it anticlockwise.



Older SRAM shifters

03c Some older SRAM shifters have a winged screw or Allen bolt cap on top. Use your fingers/a 3mm Allen key to remove this, turning it anticlockwise. Push the exposed section of inner cable into the shifter. When the end pops out from under the spring, pull it out – taking care not to dislodge the spring – and discard it. Repeat on the other shifter.



04 It may be necessary to replace the outer cables too. In this case, remove all the old outer cables from the bike. Either cut new sections to match their length or cut a single section of outer cable to the same length as the exposed part of the old inner cable to create a full-length outer cable run. Use a pick to open up the ends. Install the new outer cables on the bike.



05 Lightly coat the new inner cables with lubricant by running them through a cloth or sheet of workshop paper impregnated with cable lube or 'wet' chain lube. Carefully feed the cables into the shifters in a reversal of step 3.



09 Turn the cranks while pulling the front mech away from the frame. The chain should shift onto the largest chainring easily. If not, turn the screw marked 'H' anti-clockwise half a turn at a time until it does. If the chain is pushed off the chainring, wind the screw clockwise until this no longer happens. Fine tune until the largest chainring is central in the mech.



10 Continue turning the cranks but release the front mech. The chain should drop onto the smallest chainring and stay there. If the chain falls off the chainring towards the frame, turn the 'L' screw clockwise. If the chain is reluctant to shift onto the smallest chainring, turn the 'L' screw anticlockwise. Adjust until the mech sits centrally over the smallest chainring.



11 Route the inner cable through the groove under the clamp bolt on the rear mech. Without moving the mech, pull the cable to apply a little tension. Tighten the clamp bolt until snug, turning it clockwise with a 5mm Allen key. Let go of the cable. Click through the gears while turning the cranks to tension the cable. Loosen the clamp bolt, take up any slack and retighten.

TOOLS FOR THE JOB

1. Workstand
2. Allen key set
3. Cable cutters
4. Phillips screwdriver
5. T25 Torx key
6. Pick (or old spoke)
7. Cable or wet lubricant
8. Cloth/workshop paper



02 Wind the barrel adjusters on the shifters fully clockwise, then back them off two turns to allow adjustment later. Cut the cable end caps off the old gear cables using a good quality set of cable cutters. Grip the outer gear cable next to the first shifter with your fingers and pull it out a few inches, exposing the inner cable. Repeat on the other shifter.



03a If you have Shimano shifters, use a Phillips screwdriver to unscrew the plastic plug on the opposite side of the shifter to the barrel adjuster, turning it anticlockwise. Put the plug somewhere safe. Push the exposed section of inner cable into the shifter. When the end pokes out the other side, pull the cable out and discard it. Repeat on the other shifter.



03b If you have SRAM shifters with a rubber tab on top, use a 4mm Allen key or T25 Torx key to remove the shifter from the bar, turning the bolt anticlockwise. Peel the rubber tab upwards with your fingers. Push the exposed section of inner cable into the shifter. When the end pokes out from under the rubber tab, pull the cable out and discard it. Repeat on the other shifter.



06 Feed the inner cable through the narrow end of a new ferrule, then the outer cable, then the wide end of another ferrule. Push the ferrules onto the outer cable. Repeat on each section of outer cable. Pull the inner cable through until the cable head is seated inside the shifter. Refit the plug/tab/screw/cap. Refit the shifter on the bar, if removed. Repeat on the other shifter.



07 Turn the cranks. The chain should sit on the smallest cassette sprocket. If not, use a Phillips screwdriver to adjust the screw marked 'H'. Turn it anticlockwise to move the rear mech closer to the frame or clockwise to move it closer to the wheel. Adjust until the rear mech's top jockey wheel sits directly below the smallest sprocket.



08 Turn the cranks while pushing the rear mech towards the wheel. The chain should sit on the largest sprocket, with the top jockey wheel directly below it. If not, adjust the screw marked 'L'. Turn it clockwise if the chain is too close to the spokes or falls off the top of the cassette. Turn it anticlockwise if the chain won't move up from the smaller sprockets.



12 Ensure the front mech cage is in line with the smallest chainring and the cable is correctly routed to the clamp bolt. Tension the cable and tighten the clamp bolt, turning it clockwise with a 5mm Allen key. Let go of the cable. Click through the gears while turning the cranks. With the chain back on the smallest ring, loosen the clamp bolt, take up any slack and retighten.



13 Turn the cranks and click through the front gears. If the chain is reluctant to shift onto the bigger rings, turn the barrel adjuster on the shifter anticlockwise. If it's reluctant to shift onto the smaller rings, turn the adjuster clockwise. When the shifting is smooth, use your cable cutters to cut the inner cable a few centimetres from the mech and crimp an end cap in place.



14 Turn the cranks and click through the rear gears. If the chain is reluctant to shift onto the bigger sprockets, turn the barrel adjuster on the shifter anticlockwise. If it's reluctant to shift onto the smaller sprockets, turn the adjuster clockwise. When the shifting is smooth, cut the inner cable a few centimetres from the mech and crimp an end cap in place.

WORKSHOP WISDOM

Before replacing cables, check that the rear mech is bolted to its hanger tightly, the hanger is bolted to the frame securely and the rear wheel is properly installed. Next, check that the mech hanger and rear mech are straight and that the mech cage is in line with the chain. Finally, check that the front mech cage is parallel to the chainrings and just clears the teeth of the largest ring.

SERVICE YOUR HEADSET

If your steering feels rough or you spot rusty brown water dribbling down your bike's fork crown or head tube after a wash, it's time to sort your headset out. Here's how to do it...

DIFFICULTY: INTERMEDIATE
TIME TAKEN: 1 HOUR
COST £0-£20



01 Clamp your bike in a workstand and remove the front wheel. Use a 5mm Allen key to remove the brake calliper from the fork, turning the mounting bolts anticlockwise. Store the bolts somewhere safe. Remove any zipties holding the brake hose to the fork. Use an Allen key to loosen the stem's steerer clamp bolts, then remove the top cap bolt and top cap.



05 With the parts laid out, clean each component – except any cartridge bearings – with degreaser and a rag. Lie them on a paper towel, making sure you keep them in the order you removed them to avoid confusion. If you have loose ball bearing races, carefully clean them now, but don't dislodge any balls from the retainer/race.



06 With everything clean, check all of the headset's internal washers and seals for damage. If you find you have any loose ball bearing races, check the individual bearings carefully for flat spots or signs of wear. If they're damaged, this could affect how smoothly your headset rotates in the frame.



07 If your headset uses cartridge bearings, give them a thorough external clean with degreaser and a rag. With the bearing flat on the workbench, use a sharp blade to carefully pry up the outer edge of the bearing seal. Once it starts to come away, stop using the blade and slowly remove the seal with your fingers.



11 Now the bearings are serviced and all the removable parts of the headset are clean, clean the headset cups in the frame thoroughly, removing any grime, dirt or grease that could hinder how the bearing is seated when reinstalled. If there are any discrepancies, such as pitting on the inner surfaces of the cups, you'll need to replace the whole headset assembly.



12 Before reassembling the headset, give the crown race (pressed onto the fork crown over the steerer tube) a good clean too, removing dirt or grease. If it's a split-crown race, pop it up and remove it to clean it, giving the area underneath a good clean too, before smearing a light coating of grease where the crown race will sit and securely slip it into place.



13 If you have a cartridge bearing headset, apply a thin but thorough coating of grease around the inside faces of the upper and lower headset cups. If you have a ball bearing headset, apply a generous amount of grease to the inside faces of both cups. Sit the top bearing in the cup. Reassemble the upper headset assembly in the correct order and orientation.

TOOLS FOR THE JOB

1. Workstand
2. Allen key set
3. Rubber mallet
4. Penetrating lubricant
5. Flat-head screwdriver
6. Degreaser and rags
7. Paper towel
8. Sharp blade
9. Spray degreaser
10. Grease



02 Support the fork with one hand and use the other to pull the stem upwards and off the fork's steerer tube. Remove any spacers at the same time, remembering the order they came off in. Store them safely to one side. If the fork is reluctant to drop through the frame at this point, give the top of the steerer tube a gentle tap with a rubber mallet.



03 With the fork out of the frame, remove the split-wedge washer and upper headset assembly, including any internal washers. If you have loose ball bearings in a retainer/race, pick out the retainer and be careful not to drop any ball bearings. Lay the parts in the order on your workbench – this will help later.



04 If you have cartridge bearings and they're reluctant to move, spray the outer edges with a penetrating lubricant and leave for a few minutes. Hook both first fingers into the bearing and pull out and up. If this doesn't help, work your way around the bearing with a flat-bladed screwdriver, lifting it. Remember which bearing goes at the top and which goes at the bottom.



08 Use a spray degreaser to clean the inside of the bearing. Slowly rotating the bearing while cleaning will get more dirt and grime out. Examine the bearing inside for wear. When all the grime is flushed out, carefully clean the seals. If the bearing is seized or has a lot of play, it's best to get a replacement. Carefully dry the bearing with a clean rag.



09 One bearing at a time, pack the open side full of grease before gently refitting its outer seals. Lightly press this on with your fingers until it sits flat and under the groove of the outer edge of the bearing. The bearing should spin smoothly with no roughness. Clean off any excess grease.



10 Repeat steps 6 to 8 with the other bearing. Any seal damage, persistent roughness, damaged balls or play means the bearing should be replaced. If you're replacing them, check the inner and outer diameters as well as the thickness of the bearing and any angled surfaces to get the right replacement. Most headset bearings have an identification print.



14 Sit the lower bearing onto the crown race on the fork, ensuring it's the correct way up. Slide the fork up through the head tube and upper headset assembly. Hold the fork in place while sliding any spacers and the stem back onto the steerer tube, then replace the top cap and bolt, tightening it with a 5mm Allen key until finger tight.



15 Leaving the steerer clamp bolts loose, refit the front brake calliper (without fully tightening it) and wheel. Take the bike off the workstand. Holding the front brake, rock the bar back and forth while holding the headset's top bearing cover between thumb and finger. If there's movement, turn the top cap bolt a quarter-turn clockwise, tightening until there's no movement.



16 Tighten the stem's steerer clamp bolts, then align and tighten the brake calliper – both to the manufacturer's recommended torque setting. Secure the brake hose to the fork with the in-built cable guide or zipties. Check for headset movement again, before a quick test ride. If things loosen up, undo the stem clamp bolts and repeat steps 15 and 16.

WORKSHOP WISDOM

Keeping on top of basic maintenance like this will keep your bike running smoothly and feeling sweet for longer, and could save you a heap of cash in the long run. If you're riding in really wet, muddy conditions (so pretty much any time in the UK!) it's a good idea to give your headset a good going over and some fresh grease every few months.

CHECK AND TRUE YOUR WHEELS

Dents, buckles and 'hops' (vertical wobbles) weaken your wheels and can make for a rough ride. They're not as difficult as you might think to get rid of though – follow these steps to get your hoops rolling straight again

DIFFICULTY: INTERMEDIATE
TIME TAKEN: 1 HOUR PER WHEEL (FOR BEGINNER)
COST £5+ FOR SPOKE KEY



01 To check if a wheel is true, start by clamping your bike in a workstand or turning it upside-down. Remove the wheel you're going to work on – in this case, the rear – from the bike. Remove the tyre and tube, then refit the wheel in the frame. Check the spokes are all tensioned by giving each pair a light squeeze between your thumb and forefinger.



05 Spin the wheel again. This time you're looking for any sideways buckles in the rim. You can make a gauge that'll help you check for this, using a rubber band and a ballpoint pen or lolly stick. Hold the pen/stick at 90 degrees to the chainstay or seatstay and use the rubber band to secure it in place, making sure it's wrapped tightly around the stay.



06 Position yourself at the back of the bike, facing the rim bed, and spin the wheel again. Slowly push the pen/stick closer to the wheel until it's lightly touching the rim. This will show you where the rim is off centre. Slow the spin down and use your permanent marker to mark the last spoke before the buckle and the first spoke after the buckle.



07 Add a quarter turn of tension to the spokes attached to the opposite side of the hub to the buckle – so, if the wheel is buckled to the right, you'll need to tighten the spokes that run from the affected area of rim to the left-hand side of the hub. Now run the rim past the pen/stick again.



11 Now the wheel has no sideways buckles, it's time to look for vertical deflection. Inspect the wheel slowly, looking for flat spots in the rim. These are caused by big impacts and aren't something you can cure with a true-up. If you find any, mark them inconspicuously with a pen or smaller sticker to make sure you don't try to cure them in the next few steps.



12 If you find a high spot, where the rim moves further from the hub, count the number of spokes attached to the affected section of rim, highlight them with your marker pen and tighten them all a quarter turn, making sure you tighten an even number of spokes. Repeat until the high spot has been removed. Repeat with any other high spots.



13 If you find a low spot, where the rim dips closer to the hub, count the number of spokes attached to the affected section of rim, highlight them with your marker pen and loosen them all a quarter turn, making sure you loosen an even number of spokes. Repeat until the low spot has been removed. Repeat with any other low spots.

TOOLS FOR THE JOB

1. Workstand
2. Spoke key (make sure you get the right size/type for your wheels)
3. Permanent marker pen (can also use small stickers)
4. Ballpoint pen or lolly stick
5. Rubber band
6. Tape measure







02 If there are any loose spokes or if they all seem a bit baggy, this is likely to be the root of your problem. If there are single loose spokes, use your spoke key to tighten them half a turn at a time – by turning them clockwise, viewed stood facing the rim bed. Feel for tension every half-turn. When the tension starts to feel similar to the other spokes, stop tightening.

03 If the spokes all feel a bit baggy, start at the valve and work around the wheel, tightening each one a quarter turn. When you get to the valve again, use your thumb and forefinger to make sure they're all evenly tensioned. If you don't know how tight the spokes should be, compare them to the spokes on the other wheel. If they still feel baggy, repeat this step.

04 Now your spokes are all tensioned, have a look around the rim for any dents, running your finger around the rim wall to be sure. If you find any, highlight them with a permanent marker pen so you know where they are. Take your time, because these dents will throw you off in the next few steps if you don't allow for them all.







08 If there's still a buckle in the same place, loosen the spokes attached to the same side of the hub as the buckle by a quarter turn. This will release the tension on that side of the rim and help the newly tensioned opposite-side spokes pull it back into line. Repeat steps 07 and 08 until the buckle you're working on is removed.

09 Work around the wheel, removing every buckle in the same way. Once you've fixed one side, swap your truing gauge to the opposite stay and repeat the process. If there are any buckles where the spokes won't pull the wheel into shape, or that last for over a quarter of the wheel's circumference, you'll probably need a new rim – get some advice from your local bike shop.

10 Spin the wheel and use your truing gauge to check that it's running totally straight and true. Take your time and don't be afraid to keep working at it. You'll probably need to swap the gauge from side to side a couple of times until the wheel is perfectly true.







14 Now check the wheel runs centrally in the frame, with an equal distance between the rim and each chain/seatstay. If this measurement, called the dish, isn't equal to within a couple of millimetres, tighten all the spokes attached to the hub on the side with the bigger gap by a quarter turn, then measure again. If the wheel is more than 5mm out of dish, visit your LBS.

15 Now the wheel has been dished correctly and trued both vertically and laterally, give it a spin again to check it over. Don't expect perfection first time – the wheel will probably need another lateral true before you're finished, so repeat steps 05 to 10.

16 After your first ride, get the bike in the workstand and have another look at the wheel you've worked on. The spokes will bed in after some riding time, so may need adjusting a bit more to keep them perfectly tensioned. Don't forget this step or all your time and effort could go to waste!

WORKSHOP WISDOM

Truing wheels is a task that goes from mountain to molehill with practice, but even experienced wheel builders take their time. Be methodical and use the valve to help you remember where you're up to. When checking spoke tension, use another wheel as a reference point and don't go super-tight. If you're having to use all your strength, something probably isn't right.

TRICKS OF THE TRADE

Professional mechanics have their own way of doing things and are masters when it comes to making potentially annoying jobs quick and simple. Here are four examples – just be mindful that these may not be the manufacturers' recommended methods

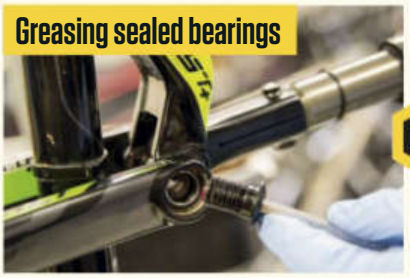
DIFFICULTY: INTERMEDIATE
TIME TAKEN: 10 MINUTES PER STEP
COST FREE

Replacing internally routed cables



01a If cables are already fitted, it's important to leave the inner cable fixed in the shifter to begin with and only remove the outer. (If cables aren't already fitted, skip to 01b). Undo the cable clamp bolt on the rear mech, grasp the outer cable where it exits the frame at the rear and pull it all the way out. You may need to do this in stages if the cable continues through the stays.

Greasing sealed bearings



01 When sealed bearings start to feel slightly worn, their life can normally be prolonged with a fresh flush of grease. Mechanics will do this to most of your bike's sealed bearings during a service. To start, locate the bearing you want to grease up. It doesn't necessarily have to be out of its seat, but you'll be able to do a more thorough job if you can get to both sides of it.



02 Carefully insert a sharp knife blade in between the outer edge of the rubber seal and the outer race of the bearing. Use a twisting motion to pop the seal upwards, then remove it with your fingers, being careful not to bend or damage the seal. Repeat this on the other side of the bearing if you can get to it easily.



03 Using a light lubricant such as WD-40, with the fine spray tube attached, spray the bearing's inner race to clean out any grease and dirt that's got past the seals. If you can, check that the bearing spins freely too. Using a grease gun, fill the bearing's inner race with high-quality grease.



03 Let go of the mech and, while turning the cranks, shift up and down through the gears to let the cable sit itself in place. Then shift back to the hardest gear and repeat the stretching procedure from step 02. Now go ahead and set up your gears normally, starting with the adjustment of the high and low stop screws.



04 There should now be a small amount of slack in the cable. Loosen the cable clamp bolt on the mech, tension the cable and retighten the bolt. Make sure the end of the cable is cut tidily and has a cable end cap crimped in place to prevent fraying. Repeat steps 01 to 04 with the front mech (if you have one).

Shortening a RockShox Reverb hose



01 Turn the return speed adjuster on the lever fully anticlockwise (the opposite direction to the '+' arrow). Decide how long you want the hose and measure this distance from the post. Use a hydraulic hose cutter to cut the hose at the lever end, holding the post end of the hose still so you don't lose any hydraulic fluid.

TOOLS FOR THE JOB

1. Allen key set
2. Rags
3. Welding rod (or spare inner cable)
4. Insulation tape
5. Sharp blade
6. Light lubricant
7. Grease gun and grease
8. Cable cutters
9. Hose cutter
10. Pliers
11. Reverb Oil
3. Torx key set







01b With the outer cable removed, give the exposed areas of inner cable a wipe, then slide the new outer onto the old inner cable, working from the rear mech forwards. Once the whole outer cable is in place, remove the old inner cable from the shifter. Thread a new inner cable through the shifter and outer cable, clamp it to the rear mech and index your gears as normal.

02a If there's no cable in the frame already, it can be difficult to locate the exit point when threading a new outer cable through. One trick pro mechanics use is to put a slight bend in a length of welding rod, around 5cm from one end, and thread this through the frame instead. Once you've managed to poke the end out of the cable exit, make sure to keep hold of it.

02b Use a small amount of insulation tape to attach either the inner or outer cable to the rod, then carefully thread it back through the frame and out of the cable entry point, always feeding the cable rather than pulling the rod. If you don't have any welding rod, you can use an inner gear or brake cable instead – in some cases, these works better due to their flexibility.



04 Sit the seal in place on the side of the bearing you've just greased. Use your thumb to pop it into place, pressing lightly and evenly. If you can reach the other side of the bearing, repeat the procedure there. Check that the bearing still spins freely and feels smooth.

Pre-stretching gear cables



01 After changing inner cables, it's a good idea to pre-stretch them so you don't have to make any adjustments after the first couple of rides. This needs to be done before you index your gears. Make sure the cable is correctly routed to the mech and that you're in the top (hardest) gear at both ends (shifter/mech).



02 Make sure there's only minimal tension in the cable. Without turning the cranks, shift down with your right hand (as if trying to move the chain onto a larger sprocket) while holding the mech in place with your left hand and resisting the cable movement. You should be able to feel the cable stretching.



02 Leave the main section of hose sat with the cut end facing upwards. The 'waste' piece of hose will still be attached to the lever. To remove it, rotate it anticlockwise using a pair of pliers and it'll slowly unscrew from the lever's threaded hose bard. When it's almost off, hold a finger over the cut end to avoid any spillage.



03 Remove the waste section of hose and put it in the bin. Make sure the fluid is still level with the top of the cut on the remaining section of hose. If you've lost some, apply a drip of Reverb Oil to the end of the hose. A tap with a finger should dislodge the small air pocket at the top of the hose.



04 Use a Torx T25 key to remove the lever from your handlebar, being careful not to actuate the post. Press the hose barb into the shortened hose, then rotate the lever clockwise until the hose is fully threaded on. Refit the lever using the Torx key.

WORKSHOP WISDOM

These small tricks of the trade are all relatively easy with some mechanical know-how, and we've skipped on some very basic stuff in the assumption that you're already capable of doing the job in question and just want to learn an easier or quicker way of doing it. As always, your local bike shop should be able to rescue you from any sticky situations you find yourself in.

SILENCE YOUR STEED

DIFFICULTY: INTERMEDIATE
TIME TAKEN: 2 HOURS
COST £5-£15 FOR MATERIALS

A silent bike is a fast bike. The fewer rattles, squeaks and groans your ride emits, the more you can focus on shredding the trail rather than worrying about which bit of your bike sounds like it's in its death throes



01 Chain slap

A dead cert for noise is the chain slapping against the frame over rough ground. Use some brake cleaner or degreaser to clean the rear triangle/swingarm and you should be able to see where the chain is hitting the frame. Use a chainstay protector, the soft (looped) side of some sticky-backed Velcro or some thick rubber mastic tape to cover any areas of contact. The top and bottom of the driveside chainstay and the inner face of the seatstay are all worth covering if you can.

02 Squeaky seat

If you can hear creaking when you're sat down or putting weight on the saddle, remove the seatpost from the frame and the saddle from the post. Give the saddle clamp and rails a good clean and a light coating of grease. Then reassemble, checking the torque settings of all the bolts. Lightly coat the inside of the seat tube with grease or (if the post or frame is made from carbon fibre) carbon assembly compound, then refit the post in the frame.

03 Creaky cranks

Noises from the crank area can be a nightmare to pin down. First, check the chainring bolts are tight – if not, apply some grease and tighten to the correct torque. Next, following the manufacturer's instructions, treat your pedals to some fresh grease. If you ride flats, check the pins are tight too. If the creak's still there, it's likely an issue with the BB or crank/BB interface. Remove the cranks, disassemble the BB, then regrease, reassemble and check torque settings.

04 Dry mech

Whining noise from your rear mech? The jockey wheels are probably running dry. On a SRAM Type 2 mech, use the Cage Lock to make them easier to access. With any other mech, remove the rear wheel from the frame. Use a 3mm Allen key to remove both jockey wheels. It's vital to remember which was on top because they move slightly differently. Remove any bearing covers, clean everything thoroughly, coat all moving parts in grease and reassemble.

05 Cockpit woes

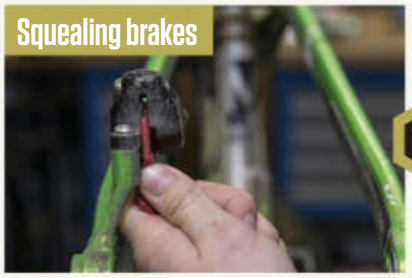
Creaks from the bar/stem area are common, and sometimes the fix is as simple as making sure all the bolts are correctly torqued up. If that doesn't do the trick, take the bar and stem off the bike, clean the clamping surfaces (the centre of the bar and the faceplate and steerer clamp of the stem) and apply a light coating of grease or carbon assembly compound to the clamping surfaces and all the bolt threads before reassembling.

TOOLS FOR THE JOB

1. Brake cleaner/degreaser
2. Chainstay protector (can also use rubber mastic tape or sticky-backed Velcro)
3. Allen key set
4. Grease or carbon assembly compound
5. Torque wrench
6. Torx T25 key (only needed if chainring bolts are Torx head, not Allen)
7. Crank and BB removal tools (see pages 12-15)
8. Brake pad spreader
9. Zipties (or flat-headed screwdriver)



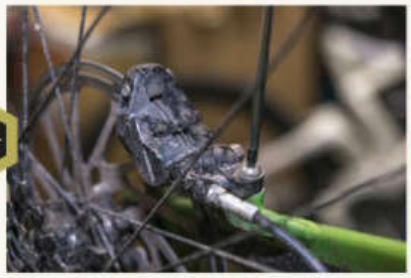
Squealing brakes



06a Brake noise can often be traced to a misaligned calliper. Remove the wheel and use a pad spreader to carefully push the hydraulic pistons back into the calliper. Then loosen the calliper mount bolts so it can move freely from side to side.

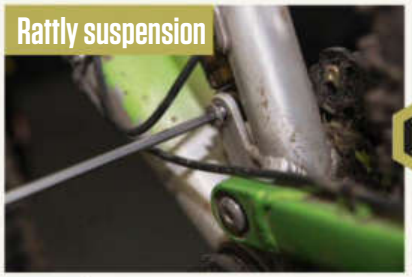


06b Replace the wheel in the frame, then squeeze the lever as if you were braking. It should 'pump up' when the pads first make contact with the rotor, then achieve a consistent feel.



06c With the lever pulled towards the bar, do up the calliper bolts with a 5mm Allen key, swapping between them every half turn. Spin the wheel. The calliper should be central over the rotor, with no contact between the pads and rotor when you're not braking.

Rattly suspension



07a Worn shock bushes are a common cause of noise. Unbolt the shock from the frame, noting its orientation. Pick an end, hold the shock bush spacer kit between your thumb and forefinger (while still in the shock) and wobble it to see if there's any play.



07b Remove the spacer kit from the shock and check it for wear. If there's a lot of damage it'll need replacing. Inspect the shock bush itself, looking for scoring or burring. If there's a lot of damage you'll need to get your local bike shop to press in a new shock bush.



07c If the shock bush and spacer kit are OK, give the internal spacer a thin smear of grease, then push it back through the shock bush. Sit the outer spacers on it. Then repeat steps 07a to 07c at the other end of the shock.

Cable clatter



08a Cables often bash against each another and rattle around in/on the frame. Where cables are tapping each other, use a ziptie to hold them together. Don't do it up super-tight – the cables still need to be able to move when you turn the handlebar.



08b If that doesn't allow enough cable movement, use two interlocking zipties to limit the cable flapping without affecting your steering.



08c If the cable outers are moving around in the frame's cable guides or internal routing, you can stop the noise with a couple of small zipties. A ziptie around the outer at each end of the cable routing will stop it moving, keeping everything quieter.

REPLACE YOUR PRESS-FIT BB

If your press-fit bottom bracket feels ropey or has developed sideways play it can make pedalling hard work. Here's how to replace the common BB92 type

DIFFICULTY: INTERMEDIATE
TIME TAKEN: 1 HOUR
COST FROM £55 FOR BB REMOVAL AND INSTALLATION TOOLS



01 Give your bike a good clean, then clamp it in a workstand. Use degreaser and a rag to make sure there's no dirt or grime left on the cranks or in the BB area. Use a pair of quick link pliers (SRAM) or a chain tool (Shimano) to remove the chain, and place it to one side. If your bike has a chain guide, slide the upper and/or lower guide(s) out of the way.



04 Give the spacers a clean and set them down somewhere in the order they were removed. Give the cranks and the BB area of the frame another really good clean with degreaser and a rag. This is a good chance to give your chainring(s) a clean too.



05 With the cranks removed, it's time to check you've got the right BB to replace the worn one with. SRAM cranks need a SRAM GXP BB92 BB and Shimano cranks need a Shimano BB92 BB. If your cranks are from another brand, measure the inside diameter of the worn non-driveside BB cup with a vernier calliper. If it's 24mm, a Shimano BB should do the job.



06 Insert the press-fit BB tool through the drive side of the BB, non-splayed end first. As it slides through, the wings should splay out to sit against the bearing. If possible, get someone to brace the frame. Then, with the tool fully engaged, hit the protruding end carefully with a mallet from the non-drive side until the driveside bearing and cup come out.



10 Sit one of the bearing press adaptors that comes with the press-fit BB tool against each cup. SRAM cranks will need the adaptor to be fitted backwards on the non-driveside cup so the force is applied across the bearing. Coat the BB's inner axle seal in grease, sit the cups in place on the frame, then slide the headset press through the BB shell.



11 With the bearing press adaptors correctly orientated and the BB cups sitting squarely against the frame, turn the handle of the headset press slowly clockwise. Press the BB gently into the frame, constantly checking the alignment and that the cups are being pressed in as squarely as possible.



12 When the lips of the BB cup sit against the edge of the BB shell, the installation is complete. Don't tighten the headset press unnecessarily, because this can damage the bearings. Wipe any grease away to check that the BB is fully pressed into place. Once you're sure all is good, undo the headset press and pull the tool from the frame.

TOOLS FOR THE JOB

1. Workstand
2. Bike cleaner
3. Degreaser and rag
4. Chain tool or quick link pliers
5. 5mm Allen key
6. 8mm Allen key
7. Shimano Hollowtech II end cap tool – eg. Shimano FC16 (for Shimano cranks)
8. Flat-headed screwdriver
9. Rubber/plastic mallet
10. Vernier calliper (for non Shimano/SRAM cranks)
11. Press-fit BB tool (eg. Park Tool BBT-90.3)
12. Anti-seize grease
13. Headset press
14. Torque wrench



Shimano removal

02a If you have Shimano cranks, first loosen both of the 5mm Allen key bolts on the non-driveside crank arm, turning them anticlockwise. Fit the Hollowtech II end cap tool and turn it anticlockwise to remove the end cap. Use a small screwdriver to disengage the security plate between the two clamping faces. The non-driveside crank should now pull off.



Truvativ/SRAM removal

02b If you have a Truvativ GXP or SRAM crankset, use an 8mm Allen key to undo the axle bolt in the non-driveside crank arm, turning it anticlockwise until the crank arm comes away from the axle.



03 Tap the end of the axle with a plastic or rubber mallet to start it moving. You should now be able to remove the driveside crank arm and axle from the frame. Watch out for any falling spacers and make a note of where they came from and what order they were positioned in.



07 With the driveside cup removed, insert the press-fit BB tool through the non-drive side of the BB and repeat step 6 to remove the non-driveside bearing and cup.



08 If your BB proves particularly stubborn, it's worth taking the bike to your local bike shop for some expert advice – you don't want to wreck your frame, after all. With the old BB out of the frame, give the inner shell a good clean with degreaser and a rag. Check for any imperfections or marks on the press-fit surfaces.



09 Installation time! To prepare the frame's BB shell, coat it in a generous helping of anti-seize grease. If you're installing a GXP BB, you'll need to make sure you install the BB the right way around. The cups have LH or RH marked on them – RH (Right Hand) being the drive side and LH (Left Hand) being the non-drive side, which has a smaller internal diameter.



13 Now get the BB ready for refitting the cranks. If it's a SRAM BB, cover the inner seals on both cups with grease before sliding the outer driveside seal on to the crank axle along with any other spacers and the spring washer you may have removed earlier. Cover the axle in a film of grease before pushing the driveside crank/axle assembly through the BB.



14 If it's a SRAM BB, fit the non-driveside seal before refitting the non-driveside crank arm. If it's a SRAM crankset, use a torque wrench to tighten the 8mm Allen key bolt to 50Nm. If it's a Shimano crankset, slide the non-driveside crank arm into place, reseat the security plate and refit the end cap, doing it up finger tight. Then torque the 5mm Allen key bolts to 12-15Nm.



15 Spin the cranks. They should move smoothly and without resistance. Check for any play in the system by holding the frame in one hand, the end of a crank arm in the other and trying to force movement. If all is good, refit the chain using a new master link or joining pin, check the gears are properly adjusted and, where relevant, re-adjust the chain guide.

WORKSHOP WISDOM

If there's play in the system or the bearings seem tighter than they should be after fitting a new BB, remove and reinstall the cranks, checking that every washer or spacer is in the right place and all the surfaces are well covered in grease. Recheck the torque settings after the first ride and keep an eye on how it wears – changing a totally shot BB can be a difficult job.

REPLACE YOUR CRANKS

A new crankset can shave a chunk of weight from your bike and improve pedalling efficiency too. You can also upgrade to a 1x set-up, removing the front mech and shifter for further weight saving. Here's how to remove your old cranks and fit a new set

DIFFICULTY: EXPERT
TIME TAKEN: 1 HOUR
COST £15-£50 FOR TOOLS



01 Give your bike a really good clean, paying particular attention to the drivetrain. Clean the chain, cassette, cranks and chainrings with degreaser and a stiff brush, making sure to remove as much dirt, grease and grime as possible. Dry the bike with a clean rag, then clamp it in a workstand.



05 If you have a chain device fitted, remove the upper and/or lower guide(s) so they don't cause an obstruction when you remove the crankset. Give them a good clean and put them to one side.



Shimano removal

06a On Shimano cranks, use a 5mm Allen key to loosen both axle clamp pinch bolts on the non-driveside arm. Remove the end cap with a Hollowtech II end cap tool. Use a screwdriver to disengage the security plate between the bolts, then pull off the non-driveside crank arm. Tap the crank axle with a mallet and remove the driveside arm and axle.



Truvativ/SRAM removal

06b On Truvativ GXP or SRAM cranks, use an 8mm Allen key to turn the self-extracting axle bolt in the non-driveside crank arm anticlockwise. The non-driveside crank arm should remove itself fully from the crank axle. Tap the crank axle through the frame with a rubber mallet and remove the driveside crank arm and crank axle.



10 Sit the ring(s) against the new crank spider in the same orientation as before. Slot the nut of the first chainring bolt into one of the holes in the spider from the rear, then thread the bolt through from the front. Tighten it up with the Allen key or Torx key, gripping the nut with a chainring bolt tool to stop it spinning. Repeat on the other three bolts.



Shimano fitting

11a If you're fitting Shimano cranks, push the driveside crank arm with axle attached through the BB shell. Orientate the non-driveside crank arm correctly and slide it onto the axle. Use a Hollowtech II end cap tool to tighten the end cap finger tight. Use a torque wrench with a 5mm Allen key fitting to tighten the crank's axle clamp pinch bolts to 12-14Nm.



Truvativ/SRAM fitting

11b If you're fitting SRAM cranks, push the driveside crank arm with axle attached through the BB. Orientate the non-driveside crank arm correctly and slot it onto the crank axle. Use a torque wrench with an 8mm Allen key fitting to tighten the bolt on the non-driveside crank arm to 50Nm. Check the cranks spin freely, without any play in the BB.



TOOLS FOR THE JOB

1. Degreaser
2. Stiff brush
3. Rag
4. Workstand
5. Pedal spanner
6. Allen key set
7. Quick link pliers or chain tool
8. Hollowtech II external BB cup spanner and end cap tool
9. Screwdriver
10. Rubber or plastic mallet
11. Chainring bolt tool
12. Torque wrench



02 Use a pedal spanner or Allen key to remove your pedals. The right-hand/driveside pedal axle needs to be turned anticlockwise (viewed from the pedal end, not the crank arm end) to be removed. The left-hand/non-driveside pedal has a reverse thread and needs to be turned clockwise. Once the pedals are off, put them to one side.



03 Spin the cranks and shift onto the smallest sprocket on the cassette. At the front, shift onto the smallest chainring. This will remove any tension from the gear cables, making the crankset replacement easier.



04 If there's a quick link in your chain, use quick link pliers to split the chain. If not, use a chain tool to push one of the chain's pins through far enough to split the chain, but not so far that the pin falls out and the chain can't be reconnected later. It's not absolutely necessary to split the chain, but now is a good opportunity to fully degrease it if you have time.



07 If you're doing a straight crank swap and your BB is in good nick, you don't need to replace it. If you're upgrading cranks, you'll need to switch to a suitable new BB. External BBs can be tacked with a Shimano Hollowtech II spanner. To tighten the driveside cup, turn the spanner anticlockwise. To tighten the non-driveside cup, turn the spanner clockwise.



08 Press-fit BBs require a bearing press and the correct fitting to press the bearings in correctly. Always ensure you follow the manufacturer's instructions, adding the right spacers where required and greasing threads thoroughly. Turn the page for a step-by-step guide to fitting BB92 bottom brackets.



9 If you want to transfer your old chainring(s) to your new crankset, use a 5mm Allen key or T25 Torx key to undo the four bolts holding the chainring(s) to the crank spider. You may need to grip the rear of each bolt with a chainring bolt tool or a wide, flat screwdriver to fully remove them.



12 If your chain was joined with a quick link, thread the split chain through the rear mech and around the smallest sprocket on the cassette and the smallest chainring. Join the two ends of the chain with the quick link, positioning it so it sits between the cassette and front mech. Apply pressure to the cranks and the link should snap into place, joining the chain.



13 If you split the chain using a chain tool, thread the chain through the rear mech and around the smallest sprocket on the cassette. Don't put it over the chainring for now, to help reduce tension. Wiggle the ends of the chain together until the pin lines up. Use the chain tool to push the pin back into the link, reconnecting the chain. Check the link isn't stiff.



14 Refit any chain device parts you removed earlier. If you're running a front mech and have changed chainring sizes, check the position of the mech – with no tension in the gear cable, the lower edge of the mech's outer plate should sit 1-2mm above the outer chainring. Spin the cranks and shift through the gears, checking everything runs correctly.



WORKSHOP WISDOM

If you've increased the size of your chainrings, you'll need to check the length of your chain. If you've gone to one chainring from a double or triple set-up, chances are you could remove a link or two to make the chain shorter – but don't do so unless you're confident it's the right thing to do. If you're feeling out of your depth at any point, get in touch with your local bike shop.

REPLACE YOUR PIVOT BEARINGS

A new set of pivot bearings should sort out any play or excessive friction in your rear suspension. Your bike will feel box fresh, the suspension will work better and you'll be shredding the trails faster than ever

DIFFICULTY: EXPERT
TIME TAKEN: 90 MINUTES
COST £15+ FOR BEARING KITS



01 Give your bike a thorough clean, focusing on dirt around the pivots. Clamp the bike in a workstand and remove the rear wheel. Now it's time to remove the shock mounting bolts. Take up the weight of the bike's rear end with one hand and use the other to turn the bolts anticlockwise with the appropriate Allen key (usually 5mm or 6mm). Put them somewhere safe.



04a.2 Place the socket over the bearing housing. Slide a washer onto the bolt, then slide the bolt through the socket and bearing. Place a washer on the end of the bolt, followed by the nut. Hold the socket still, ensuring it stays aligned with the bearing, then turn the bolt clockwise while holding the nut with a spanner until the bearing is pushed out.



Removal method 2

04b To remove bearings from housings located in a curved part of the frame you'll need a rubber mallet and drift. Place the bearing housing on top of a thick pad. Position a stout, flat washer centrally on the inside of the bearing and place the end of your drift on the centre of this. Tap it straight down with a rubber mallet until the bearing is removed.



05 A pivot usually comprises a pair of bearings. Before removing the bearing opposite the one you've just removed, install the new bearing. This will allow the old pivot bearing to guide the new one into its housing. First, use degreaser and a rag to thoroughly clean the empty bearing bore. Then grease the bearing bore and new bearing liberally.



Installation method 2

06b You can use a soft-jawed vice to support the frame as you install the bearing. Rest the bearing housing over the vice, leaving a gap between the jaws for the pivot bolt. Push the new bearing onto the bolt and thread it through the empty bore and vice. If it's a full-length bolt, push it into the opposite bearing. Tap the bolt with a mallet until the bearing is installed.



Installation method 3

06c On pivots with bolts that thread directly into the frame, the bolt can be used to install the bearing. Push the greased bearing onto the bolt and thread the bolt through the bearing bore and into the frame. Using the correct sized Allen key, turn the bolt clockwise at least five turns so the two parts of the frame are flush. Tighten to the specified torque setting.



07 Once you've replaced all the bearings, reassemble the pivots with the washers and spacers in the order you found them. Starting with the pivots that join the rear end to the front triangle, tighten the pivot bolts to the frame manufacturer's torque settings. Cycle the rear end through its travel to ensure there's no play or excessive friction.

TOOLS FOR THE JOB

1. Workstand
2. Allen key set
3. Crank removal tools (see page 24)
4. Quick link pliers/chain tool
5. Allen bolt with nut and two washers
6. Socket wrench with various size sockets
7. Spanner (to fit Allen bolt nut, above)
8. Rubber mallet
9. Drift
10. Degreaser and rags
11. Grease
12. Full set of replacement frame bearings
13. Soft-jawed vice (optional)
14. Torque wrench



02 Remove the crankset (see page 12 of this guide). Use a 5mm Allen key to remove the rear mech and brake calliper, turning the mounting bolts anticlockwise. Detach the brake hose and gear cable from the chain/seatstay. Remove the chain after uncoupling the quick link (if one is fitted) or splitting it using a chain tool.



03 Unscrew the pivot bolts nearest the rear axle with the correct size Allen key. Remove them along with any washers or spacers, taking note of the order they're assembled in. Lay them out in the correct orientation/order for easy reinstallation. Work your way around the other pivots, repeating the process until the bike's rear end is dismantled.



Removal method 1

04a.1 If the surface around the bearing housing is flat, you can use a homemade bearing puller made from a threaded Allen bolt and nut, two washers and a socket to extract the bearing. It'll be forced out of the frame and into the socket, so before going any further use the new bearing to check that the socket is big enough to receive the old bearing.



Installation method 1

06a.1 On pivots that use a pair of bearings with a full-length bolt between them, you can use this bolt to install the new bearing because it'll support it without damaging it. Place the bearing on the pivot bolt until it sits flush with the flat end. Thread the bolt through the empty bearing bore and into the bearing at the opposite end.



06a.2 Ensure the frame is supported, with the opposite bearing housing resting on a soft, thick pad. Tap the bolt with a rubber mallet to push the new bearing into the bore on this end. If the bearing is kept straight by the bolt, the force required should be minimal. Stop when a few threads protrude from the opposite end.



06a.3 Thread the pivot bolt nut onto the protruding threads. Ensure the nut is at least five full turns onto the bolt before it contacts the bearing. We used a 6mm Allen key and 17mm socket to tighten it up until the bearing was in the housing. Stop when the new bearing is fully seated in the frame.



08 Reattach the gear cable and brake hose to the frame, taking care to ensure they're routed correctly. Reinstall the rear mech and brake calliper, tightening the bolts to the recommended torque setting. With post-mount brakes, leave the bolts loose so you can realign the calliper after reinstalling the wheel.



09 Refit the shock. While taking up the weight of the bike's rear end with one hand, use the other to thread the shock bolts through the eyelets on the frame and shock and tighten them to the frame manufacturer's recommended torque setting. Refit the cranks. Refit the chain, ensuring it's routed correctly, and rejoin it using a quick link or chain tool.



10 Refit the rear wheel and take the bike out of the workstand. Ensure the rear axle is done up correctly and free of play. Pull the wheel from side to side, checking for lateral play or clunking sounds. If there are any issues, feel each pivot for play and, if necessary, take the offending pivots apart and check each bearing is fully seated in its housing.

WORKSHOP WISDOM

Before replacing all your frame bearings, make sure they're actually what's at fault. If you're experiencing play or a clunking sound, the problem could be your shock bushings. Wiggle the frame up and down with the wheels on the ground while feeling for movement between the shock eyelet and shock bolt. If there's play at either end of the shock you may need to replace the bushings. Before buying a new set of bearings, remove the pivot bolts to check for a gritty or notchy feeling. You'll also be able to see the bearing codes printed on the seals, which will help you order new ones if a specific bearing kit isn't available for your frame.

BLEED YOUR BRAKES

'Bleeding' a disc brake means refreshing the hydraulic fluid in order to improve performance. Here we're using a Formula brake as an example, but you can follow a similar procedure with most other brakes

DIFFICULTY: EXPERT
TIME TAKEN: 1 HOUR
COST £22.95 FOR FORMULA BLEED KIT – PRICE OF OTHER BRANDS' KITS VARIES



01 Clamp your bike in a workstand. Remove the front wheel if you want to bleed the front brake, and vice versa. Check that the brake pads have a good amount of material left, but leave/refit them in the calliper. Then carefully wedge the Formula pad spacer that should have been supplied with your brakes or bike in between the pads, pushing them back into their bores.



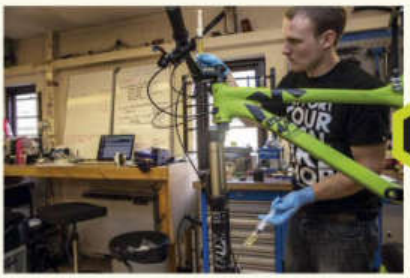
05 Place your waste brake fluid tray underneath the calliper. Then squeeze the brake lever repeatedly to drain the system of fluid. Be careful not to get brake fluid on your skin or clothes, or on the brake pads in the calliper if you plan to re-use them.



06 Attach the syringe filled with 20ml of fluid to the calliper, screwing the brass fitting on the end of the syringe into the calliper's bleed port. Turn it clockwise until finger tight. Be careful not to lose or damage the bleed port O-ring in the process.



07 Use the T10 Torx key to remove the bleed port screw from the brake lever body, turning it anticlockwise. Be careful to leave the bleed port O-ring in position inside the bleed port. Attach the remaining syringe filled with 5ml of fluid to the lever's bleed port, turning the brass fitting clockwise until finger tight.



11 Hold the lever syringe in the vertical position. Then pull on the calliper syringe's plunger, creating a vacuum in the calliper syringe. This will pull fluid back through the system, so keep an eye on the lever syringe's fluid level and make sure it doesn't drop below 5ml. The fluid entering the syringe should now be free of air bubbles.



12 Remove the calliper syringe from the calliper, turning the brass bleed fitting anticlockwise and being careful not to lose the bleed port O-ring. Put the syringe to one side, then refit the bleed port screw using the Torx key, turning it clockwise until you reach 2Nm – check this with your torque wrench.



13 Remove the lever syringe, turning the brass fitting anticlockwise. Put the syringe to one side and refit the bleed port screw using the Torx key, making sure the bleed port is brimming with fluid and the O-ring is still sat in place inside. Tighten the bleed port screw to 2Nm.

TOOLS FOR THE JOB

1. Workstand
2. Formula pad spacer
3. 2.5mm Allen key
4. 3mm Allen key
5. 4mm Allen key
6. Ziptie
7. Latex gloves
8. Formula bleed kit
9. DOT 4 brake fluid
10. T10 Torx key
11. Waste brake fluid tray/plastic tub
12. Torque wrench
13. Brake cleaner & rag



02 You now need to position the brake lever so that the bleed port is pointing upwards. The bleed port is located at the base of the lever body, between the hose entry point and the bar clamp, so you'll need to remove the lever from the handlebar using a 3 or 4mm Allen key and then ziptie it back onto the bar with the bleed port facing upwards.



03 Now it's time to start the bleed. First, put some latex gloves on – DOT brake fluid isn't good for your skin (or your bike's paintwork, for that matter). Next, make sure the syringes from the Formula bleed kit are correctly assembled, with the tubes and brass fittings in place. Fill one syringe with 20ml of DOT 4 brake fluid and the other with 5ml.



04 Use a T10 Torx key to remove the bleed port screw from the brake lever body, turning it anticlockwise. Be careful to leave the bleed port O-ring in position inside the bleed port.



08 Hold the calliper syringe vertical and push around two-thirds of the fluid through the system. The lever syringe should fill with a mixture of air and fluid.



09 Now hold the lever syringe vertical. If there are air bubbles visible in the fluid, give the syringe a light tap – this should encourage the bubbles to rise. Keep tapping until the bubbles have reached the top of the fluid. Now force around two-thirds of the fluid back through the system, watching for air bubbles entering the calliper syringe



10 Holding the calliper syringe in the same vertical position as before, push the same amount of fluid back through the system again, this time while pumping the brake lever repeatedly. More bubbles of air will work their way into the lever syringe.



14 Use brake cleaner and a clean rag to clean any surface that brake fluid has come into contact with during the bleed. Pay particular attention to the calliper, as well as to the lever body. Remove the Formula pad spacer and check the pads haven't come into contact with any brake fluid.



15 If you've spilled any fluid on your brake pads you'll need to replace them. Use a 2.5mm Allen key to remove the pad retaining pin, then remove the pads. Give the calliper a thorough clean with brake cleaner before fitting new pads and replacing the pad retaining pin.



16 Remove the ziptie holding your brake lever to the handlebar and clamp the lever back in its original position. Refit the wheel, then test your brake to make sure the bleed has been successful. If you've fitted new pads, be sure to bed them in before you go smashing any big descents!

WORKSHOP WISDOM

The Formula bleed process requires you to leave a set of brake pads in the calliper, so it's a good idea to save a part-worn pair for this purpose. Alternatively, you can substitute the pads and spacer for a well fitted universal bleed block. DOT fluid is a nasty substance so make sure to wear gloves, and protective eyewear is a good idea too. Wash any spilled fluid off your skin ASAP.

BUILD YOUR OWN WHEELS PART 1

The ability to transform flimsy spokes, delicate nipples and flexy rims into structures capable of ploughing through rock gardens and surviving your biggest cases is one of the most coveted arts of bike maintenance

DIFFICULTY: EXPERT
TIME TAKEN: 1 HOUR PER WHEEL (FOR BEGINNER)
COST £5+ FOR SPOKE KEY

BEFORE YOU START

Make sure that your hub and rim match – a 36-hole hub won't work with a 32-hole rim – and that you have the correct number of spokes and nipples. We're going to be showing you how to lace a 32-hole rear wheel using a three-cross lace.



01 Do your wheels need to be durable or light? Will the rims be suitable for the tyres you'll run? With decisions made, calculate the length of spokes you'll need. Your LBS can help or there are online spoke calculators – one of the best is at www.dtswiss.com. Once you've selected the right lengths, budget for a few spares. Keep them safe and marked with their length and position.



05 Leave the next spoke hole empty and insert a spoke through the next-but-one hole. Continue to thread spokes through alternating holes in the non-drive flange. With all the inside-outward (see Workshop Wisdom) spokes on the non-driveside flange inserted, thread a nipple onto a spare spoke, 'shoulder' (widest part of the nipple) first.



06 Pick up the rim and use the spare spoke to poke the nipple through the first spoke hole after the valve hole (viewed from the non-drive side), from the outside (tyre side) of the rim. Grasp the 'head' of the nipple with your fingers and unthread the spoke. Thread one of the spokes from the hub into the nipple. This is the 'key' spoke – mark it with a sticker.



07 Use the spare spoke method to lace all the inside-outward non-driveside spokes to the rim, leaving three empty holes between each spoke. Tighten each nipple three turns clockwise with a flat-bladed screwdriver.



11 Now the driveside spokes can be fitted. Insert an outside-inwards spoke through the first spoke hole in the driveside flange – this is the one to the right (anticlockwise) of the key spoke in the non-drive flange, viewed from the non-drive side. Thread this spoke into the first empty spoke hole in the rim to the right (anticlockwise) of the key spoke.



12 Lace the remaining outside-inwards spokes in the same way as before. You'll have to wiggle them a bit to create each of the spoke pathways.



13 Finally, lace the remaining inside-outwards spokes, remember to ensure they're laced under the third spoke crossing. By this point the general pattern of the lacing will be familiar from the spokes already in position, and the direction of the spokes and the holes in the rim they're heading for will be clear. You're now done with the lacing. Hurrah!

TOOLS FOR THE JOB

1. Tape measure
2. Fine lubricant
3. Flat-bladed screwdriver
4. Spoke key
5. Soft hammer/mallet
6. Wheel truing jig or zipties or rubber band and ballpoint pen/lolly stick

PARTS

1. Spokes
2. Nipples
3. Rim
4. Rear hub
5. Rim tape



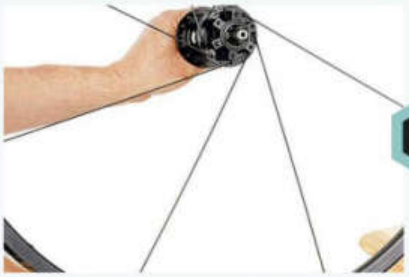
02 Remember that on the rear wheel you'll need to lose a single millimetre off the driveside spoke length and add a millimetre to the non-driveside spoke length. This is to help the wheel build into a dished state and allow the rim to end up perfectly central in the frame, while allowing space for the rear cassette.



03 Spoke beds can be rough and, in the case of pre-used rims, a bit corroded. This can make fine and accurate tuning of the spoke nipples a bit tricky. We recommend placing a drop of fine lube into each of the rims' spoke beds half an hour prior to building. This will give the lube time to penetrate the nooks and crannies of the spoke hole bed and eyelet.



04 Take the rear hub and, holding the splined cassette body, drop a single spoke through one hole on the inside of the non-driveside flange. It doesn't matter which hole you choose for the first spoke. Angle the hub flange you're lacing downwards to help make threading the spoke through easier.



08 With the first side of the spokes installed, hold the rear hub by the cassette body with the non-drive side facing upwards and rotate the hub shell away from the valve hole in the rim. This will cause the spokes to exit the hub shell tangentially, giving them the distinctive shape you'll recognise from built wheels.



09 Now it's time to add outside-inward spokes to fill the remaining spoke holes in the non-driveside flange. For a standard three-cross lacing pattern, each outside-inward spoke should pass behind two inside-outward spokes and then in front of a third inside-outward spoke. The length of each spoke should make it clear which spoke hole in the rim to lace it to.



10 When you've finished adding outside-inward spokes on the non-drive side there should be one free spoke hole in the rim between each attached spoke. Again, you're looking for three turns on the nipples to ensure an even early level of tension – you should be able to use a spoke key at this stage. Even tension now will make the final dishing and truing easier.



14 One of the key reasons for ensuring that the spokes are laced in this way is to create several pairs of parallel spokes. This allows a bit more space for the pump chuck to fit when inflating the tyres. Getting this wrong is an obvious beginner's error.



15 When steel spokes are flexed and bent to fit through flange holes and contorted under and over crossing spokes it can cause difficulty when it comes to tensioning them. Use a soft headed hammer or mallet to ease their route by tapping/pressing the spokes to take a more direct journey towards the rim.



16 Each nipple should now have had an even three turns of tensioned applied. Beginning at the valve hole, add two more full turns of tension to each spoke. The wheel may feel a bit slack – this is about half the tension the finished wheel will need. Adding more now could mean it's harder to achieve proper tension dish and true when the wheel is put on a jig for truing.

WORKSHOP WISDOM

'Inside-outwards' spokes are spokes that have been threaded from the inside of the hub towards the outside of the hub. When the wheel is built they'll sit in front of the first two spokes they cross, and behind the third. 'Outside-inwards' spokes are spokes that have been threaded from the outside of the hub towards the inside of the hub. When the wheel is built they'll sit behind the first two spokes they cross, and in front of the third.

BUILD YOUR OWN WHEELS PART 2

Now you've got your wheel laced it's time to tighten up the spokes, take out the wobbles and turn it into an arrow-straight hoop ready for some off-road punishment. Take your time, and don't get disheartened if you're not progressing that quickly



01 With the wheel loosely laced, lube the spoke threads and nipples, then wind the nipples onto the spokes an even amount. The easiest way to do this (if you haven't added rim tape yet) is to use a flat-bladed screwdriver to turn the nipple heads, visible through the spoke holes in the rim bed. Tighten until the end of the nipple just covers the spoke thread.



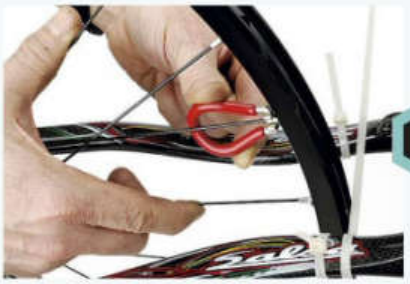
05 With the guides in position, spin the wheel and watch for the wheel moving towards the guides. This deflection – either in the form of sideways buckles or vertical 'hop' – shows exactly how out of true the wheel is. You may have two or more areas of rub, and both sides of the wheel will often exhibit similar amounts of deflection.



06 Choose a spot of deflection. Watching the guide that's being rubbed against, rotate the rim back and forth, counting the number of spokes causing the deflection. Add a quarter turn to each spoke entering the rim from the opposite side to the direction of the deflection and back off tension from those entering from the same side. Continue until the wheel runs true.



07 Now that you've got the wheel to run pretty true, you'll need to ensure that the rim is positioned centrally between the dropouts. This is called the 'dish' of a wheel. There's a specific dishing tool, but you can also use your frame as a guide. Use a tape measure to find the distance between the frame and the rim. It should be the same on both sides.



11 Spin the wheel and note the points where the rim 'hops'. Count the number of spokes over which the rim rises and tighten them a quarter turn. Where the rim dips, reduce the tension by a quarter turn. Only address even numbers of spokes so that you make as little difference to the lateral trueness of the rim as possible. Continue until the 'hop' is removed.



12 It's time to give the wheel a second bout of stress relief. An alternative to the method in step 03 is to grab successive pairs of adjacent spokes, one hand for each side of the wheel. Squeeze them and you'll feel a crunch as the nipples and spoke heads bed into their respective seats. Continue for two revolutions or until no more crunching or pinging is felt.



13 For safety's sake, recheck the dishing of the wheel, repeating step 07. As you've probably gathered by now, wheels are dynamic structures where changes to any one element can have a knock-on effect on others. Repeat step 08 if necessary. You're nearly done!







02 Start adding tension with a spoke key. Work slowly and methodically so the tension remains even. Add a single full turn to each nipple, beginning each revolution of the wheel at the valve hole so you can keep track of where you are. Continue until you have three-quarters of the final tension required (pluck the spokes of a pre-built wheel as a tension guide).

03 It should now look and feel like the wheel is coming together. Position the wheel so the axle and edge of the rim nearest you both touch the floor. Place your hands just below the centreline and push gently but firmly downwards. You should hear a slight 'ping'. Rotate an eighth of a turn and repeat for a full rotation. Repeat on the other side.

04 You're ready to begin truing. It's best to use a wheel jig, adjusting the left/right and up/down guides until they rub at the least true spots. You can also use a gauge made from a rubber band and lolly stick or ballpoint pen (see page 18). Here we're using zipties, fitting them to the frame and angling them as we would the jig guides, so they touch the rim at its least true spots.



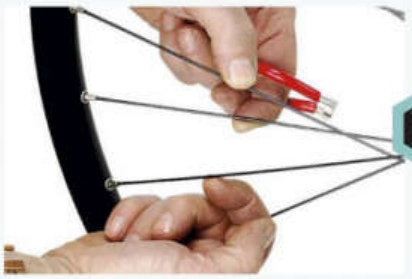




08 If the rim isn't correctly centred (it's rare for it to be at this stage), you need to add half turns of tension to the spokes on the side with greater distance and remove tension (equally) from the 'short' side. Use the valve hole as a rim marker so you know when you've covered a full rotation of the wheel, otherwise you may end up making the problem worse.

09 With the wheel correctly dished and centred in the frame it's important to go back and check it for deflection and hop again. Repeat the processes outlined in step 06 until you're satisfied that the wheel is as straight as you can make it.

10 With the left to right issues addressed, it's time to move onto the bit that stumps many amateur wheel builders – vertical deflection, or 'hop'.







14 Your wheel should now be true and free of 'hop'. If so, you're ready to add the final tension. Starting at the valve hole, add a half turn of tension to every spoke. Experience will tell you what the final tension feels like from the sound and feel of a pluck of the spokes. Until you've gained that experience, use a good pre-built wheel as a guide.

15 If you're happy with the wheel, add rim tape to protect the tube from the inside edges of the spoke holes in the rim bed. If you're still not happy, repeat steps 05 to 15 to de-bug your wheels. Failing that, a trip to the local wheel builder will have them polished off in quick time and for relatively little cost, given that you've done the hard, time-consuming and expensive bit.

16 With tight and true wheels you now need to wrap them in useful off-road rubber, add disc rotors and cassette, and give them their initial mudding. Be prepared for a bit of bedding in and the occasional twang in the first few miles as the spokes bed in. After 10 miles give them another check over and fix any issues. From there on you should be able to forget all about them.

WORKSHOP WISDOM

- Not all rims are equal. Some are straighter and rounder than others. Ask wheel builders what they recommend – they do this for a living and don't want wheels to be returned for fixing.
- If you like the idea of building your own wheels and see yourself doing more of it consider getting some of the more specialised tools – a truing stand, dishing tool and spoke nipple winder.
- There are loads of spoke keys out there but we'd only use two on our own wheels – the Buddy Spokey and Park Tool key. They're available in the common nipple gauges, usually 15g or 17g.

QUICK TRAIL FIXES

If you find yourself in a bind out on the trail, here are some hacks to help get you back in the saddle in no time

DIFFICULTY: BEGINNER
TIME TAKEN: VARIES
COST FREE

TOOLS FOR THE JOB
1. Allen key set
2. Chain tool
3. Zipties
4. Gaffer tape
5. Ingenuity!



SINGLESPEED CONVERSION

A smashed rear mech will stop the pedals turning, but you can carry on riding if you go singlespeed. To do this, remove the rear mech and remove or wind up the gear cable. Split the chain and take it off. Look down the drive side of the frame to see which of the rear sprockets lines up best with the middle chainring. Loop the chain over this combination of sprocket and chainring, and shorten it with a chain tool to create a bespoke singlespeed transmission. The chain can jump or fall off in bumpy situations but we've finished races and all manner of rides like this. This temporary fix will work on any hardtail, but full-suspension bikes are a bit more tricky. The principle will work, but the number of chain drops will generally be greater.



SADDLE BODGE

Saddle rails can and do give way. If one remains functional or one cracks while the other bends, go home gingerly. If both rails snap and the hull comes away, use clothing, zipties, gaffer tape or any combination of these to tie the saddle back on. This is a proper bodge job, so watch out for your private bits if the seat decides to part company with the bike!



CLEAT HACK

Most pedal cleats are attached with two small bolts, and these can work loose. It's dangerous to continue with a twisting cleat, so it's lucky that disc rotor bolts have the right length and pitch of thread to act as a temporary replacement. Nick one from the rear hub – you can get by with a minimum of three on there – and screw the cleat back in. Rotor bolts have domed heads so they sit a little proud, which can make it tricky to clip in.

ZIPTIE REPAIRS



JOCKEY WHEEL

When a jockey wheel falls out you can usually find the wheel but the bolt is harder to locate. Use a ziptie, wire or string threaded through the jockey wheel to keep it in position. It'll rattle, but at least you'll be riding home at the time.



FREEHUB

If your freehub body fails, the cassette can't drive you forwards. To get home you'll need to fix the cassette to the driveside spokes. To do this, thread zipties through the holes in the cassette sprockets and around the spokes. Pedal gently though!



CHAINRING BOLTS

A missing chainring bolt can be remedied with a tightly-pulled ziptie. We've seen four-arm cranks missing two bolts that have been repaired with two zipties! However successful the repair is, the bolts need replacing as soon as possible.



BRAKE LEVER PIVOTS

If a brake lever pivot bolt takes a suicidal leap from your bike, find the lever in the bushes – you may already be in there with it – and thread a ziptie or short piece of wire through the bolt holes in the lever body and lever blade, then cinch it up tight.



BAR HEIGHT

You can add to the total stack height of your headset spacers by wrapping a single ziptie around the steerer tube. This is a very temporary fix, so find some proper headset spacers as soon as you get back from your ride!



SEATPOST SAVER

The shaft of your seatpost is a good place to store useful odds and ends (unless it's a dropper). Stash a few zipties, a quick link for your chain, a glueless puncture patch and an Allen key, and use a whittled-down cork as a bung.

WORKSHOP WISDOM

In 1958, the Ty-Rap was invented for securing aircraft cabling. The ziptie has gone on to dominate everything from bodging to kidnapping. But did you know you don't have to cut them off? Pull the loose end right over and slide a thumbnail in to push the ratchet away and a ziptie will slide apart.

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